ABSTRACT OF

The Goulstonian Lectures

ON THE

CHEMICAL PHYSIOLOGY OF THE ANIMAL CELL.

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LECTURE III.

THE COAGULATION OF THE BLOOD.

[IN commencing his last lecture Dr. Halliburton expressed his indebtedness to his fellow worker Mr. T. G. Brodie, Demonstrator of Physiology at King's College, and referred to the researches of W. L. Dickinson, E. H. Hankin, Brücke, Hammarsten, Green, Ringer and Sainsbury, Arthus and Pagès, and proceeded at greater length to criticise the results obtained by Pekelharing as follows :]

The substances which have at various times received the names of fibrinoplastic substance, fibrin ferment, cell-globulin β, serum fibrinogen, fibrinogen. A tissue-fibrinogen and so forth are all varieties of one substance, which is a nucleo-albumen ; and, further, it is in all cases a nucleo-albumen which in coöperation with calcium compounds brings about coagulation in the blood. The question then arises, Does this definitely, once and for all, settle the long vexed subject of blood coagulation? I am afraid it does not ; it helps us a little nearer the truth, but the final solution of the problem may be a long way off yet. The observations which have been made by Mr. Brodie and myself were attempts to answer some of the points left undecided by Pekelharing's work, and I wish that it had fallen to my lot to announce that all the difficulties had disappeared, but as we went on what we found was that new and previously unsuspected difficulties made their appearance. I will first point out what I conceive to be the weak links in Pekelharing's chain of evidence.

1. The theory that "peptone"[1] hinders coagulation because of its great affinity for calcium salts is a very tempting hypothesis. It is supported by the fact that injection of a soluble calcium salt counteracts its action. This fact we have confirmed. We used anæsthetised rabbits in our experiments and injected about 10 cc. of 10 per cent. "peptone" solution into the external jugular vein ; after about a minute a small quantity of blood was withdrawn from the carotid artery ; this took about twenty minutes to coagulate. Then 50 cc. of a 1 per cent. solution of calcium chloride was injected, and another sample of blood withdrawn ; this clotted in a few seconds. The same result was obtained when "leech extract" was used instead of peptone ; leech extract probably owes its activity to a proteose and is much more effective in hindering coagulation in the case of the rabbit than commercial peptone. The analogy of "peptone" and soap, which has already been pointed out, also lends support to Pekelharing's views. But I have heard the objection raised that other substances which undoubtedly have a great affinity for calcium do not act in this way, and I have been asked whether potassium oxalate acts like peptone. We have put this to the test of experiment and have proved that the injection of a few cubic centimetres of a weak (0·4 per cent.) solution of this salt renders the blood when it is subsequently drawn off very slow in coagulating. In one experiment a sample of blood, which was drawn off before the injection, clotted in less than a minute ; after this injection another sample did not clot for seventeen minutes. We thus have an additional confirmation of Pekelharing's hypothesis.

2. The second difficulty may be put in the form of a question : Why do not nucleo-albumens cause coagulation to occur in extra-vascular as readily as they do in intra-vascular plasma? The amount of calcium salts is presumably the same in both. I have tried a good many experiments with salted plasma, and found, like Pekelharing, that if the nucleo-albumen is previously gently warmed with a little calcium chloride solution it acts like fibrin ferment and causes a rapid formation of fibrin ; calcium chloride alone does not produce this result. But if the treatment with calcium chloride is omitted the nucleo-albumen has little or no activity in this direction ; it may even hinder the coagulation in comparison with control specimens of the same salted plasma which had been diluted with water. I feel quite unable to offer an adequate explanation of this difficulty.

3. If fibrin ferment behaves as Pekelharing considers, its action differs from that of all other ferments with which we are familiar. The usual action of a ferment is to act as a water-carrier, and, having given water to the substance on which it acts, splitting into new products takes place (hydrolysis). There is of course no reason why ferments should not act as calcium-carriers, but if we include such an action we must either extend the meaning of the term fermentation or abandon the use of the word altogether in speaking of blood coagulation. Of all ferment actions that of rennet in causing milk to curdle is most nearly akin to bloodclotting. This resemblance has been a matter of remark from the time of Andrew Buchanan onwards. In each case we have the conversion of a soluble into an insoluble proteid, and in each case the presence of a calcium salt is necessary. Hammarsten showed that the process of milk curdling consists of two distinct stages, and more recently Ringer has confirmed this observation. It appears to me quite probable that in fibrin formation there is a similar double process, the action of the calcium coming in at the end in causing the separation of the clot. But it is very difficult to prove or disprove this idea. As for milk it is possible to boil it without coagulating the proteid, and one can thus destroy the ferment. With blood plasma this is impossible, for the blood proteids are coagulated by heat, and so one would destroy both ferment and fermentable substance. I shall, however, not pretend to be able to decide this question ; sufficient data have not yet accumulated for a definite opinion to be pronounced one way or the other, and, therefore, I shall for the present retain the use of the conventional term "fibrin ferment."

4. The last difficulty standing in the way of our full acceptance of Pekelharing's theories is that it takes no cognisance of the part that carbonic acid plays in blood coagulation. Clinical evidence supports physiological experiments in that it is the venous blood which is most liable to be coagulated. We can hardly doubt from such evidence that either the quantity or more probably the tension of carbonic acid has an important influence in hindering or promoting coagulation. I must again confess myself unable to see the full bearing of such facts, and I also think that in the present state of our knowledge it would not be safe to attempt any theorising as to the way in which they are to be fitted into Pekelharing's hypothesis.

I may now pass to a more systematic account of the experiments which Mr. Brodie and I have been making during the last two years ; they are very numerous, and all I shall attempt is a summary of their chief results. They were commenced with the object of determining whether the nucleo-albumens obtained by the sodium chloride method had the same physiological action as the nucleo-albumens obtained by Wooldridge's acetic-acid method and termed by him "tissue fibrinogens." The fact that both produce intra-vascular coagulation formed part of the chain of evidence that the two materials were practically the same, upon which I dwelt in my second lecture. The next point taken up was whether the lecithin, which I regard as an impurity, but to which Wooldridge attached considerable importance, was really the active substance, or whether the nucleo-albumen itself produces the result.

Having shown by experiment that that substance produces its effect *minus* its lecithin, whichever of the two methods is adopted for its preparation, the greater number of our subsequent experiments were performed with the material prepared by the sodium chloride method from the thymus. We adopted this method because it is more rapid and the results obtained were more certain. The material prepared by Wooldridge's method often produces no intra-vascular clotting at all ; this was recognised by Wooldridge himself, and he spoke of it as the "negative phase" in his experiments, because in the dog, which was the animal he chiefly used, the blood was not only free from clot, but it clotted with tardiness after removal from the

[1] The term "peptone" includes the proteoses with which it is generally mixed.

body. I shall later have to return to this question of the "negative phase." Our failures to produce intra-vascular coagulation by the nucleo-albumen prepared by the sodium chloride method have been very few and are in part to be explained by the fact that the solution had been kept some days before it was used. Most solutions which are active when fresh lose their activity when kept. This difficulty we have now to a large extent obviated by rapidly drying the solution in a vacuum over sulphuric acid. The powdered substance, which contains both the proteid and the sodium carbonate used to dissolve it, is readily soluble in water. The solution is viscid, but after filtration it is perfectly clear and free from solid particles. In all our experiments we have paid attention to this point; all our solutions have been thoroughly freed from solid particles by filtration. I may perhaps now describe an experiment with its ordinary results. The animal, and we have used rabbits almost exclusively, is anæsthetised with ether and fixed in a holder in the usual way. The external jugular vein is exposed and a cannula inserted; through this the solution is injected and about 10 cc. of the solution (which would contain approximately 0 05 gramme of proteid) is usually sufficient to cause death. The animal dies within a few seconds, the respiration suddenly stops; there is no dyspnœa as a rule, but there may be a slight stretching movement. Another marked symptom is extreme exophthalmos and dilatation of the pupils. The post-mortem examination is performed as rapidly as possible and the thrombosis found is usually limited to the venous blood, but in many cases there is extensive clotting in the arteries also. We have not often found a clot in the portal vein. The heart is still beating, the right side full of dark clot, the left usually empty, or it may also contain clot, which however differs from that on the right side in being bright red. Death is thus evidently due to failure of respiration, and the question arises whether the respiratory centre is at fault or whether the primary cause is to be sought in the lungs. The sudden stoppage of respiration and the absence of dyspnœa point to the respiratory centre, and this is confirmed by the fact that the severance of both vagi makes no difference in the experimental result.

I must next pass to an entirely different series of experiments. I believe that our experimental methods are so far in advance of those of many other investigators in that the solutions we employed were perfectly clear; but we sought to purify the substance we employed still further. This was done by taking the nucleo-albumen, grinding it up once more with sodium chloride and reprecipitating it by throwing it into excess of distilled water. This was repeated two or three times. The material obtained by twice repeating the process is absolutely free from lecithin and produces on injection the usual thrombosis; but if the material is still further purified it fails to produce any result whatever on injection, though the solution is still viscid; 200 cc. or more may be injected, and on killing the animal by asphyxia not a trace of coagulation is found anywhere. We have verified this very disappointing experiment half a dozen times and then sought for an explanation. Evidently in the process of purification some substance is removed from or added to the nucleo-albumen, which in consequence loses its activity. We noticed that during the processes of repeated washing there was a considerable loss of material; the nucleo-albumen collects as a scum on the surface, but if it is allowed to stand some passes into a condition of semi-solution in the weak saline underneath it. Injections of this, however, led to the same negative result. On the supposition that purification had removed something from the nucleo-albumen, we proceeded to investigate what that something was.

Our previous experiments had shown us that lecithin is not the active substance; and moreover the substance which after one or two washings causes thrombosis and that which after three or four fails to do so are both equally free from lecithin. The hot alcoholic or chloroformic extract of both contains absolutely no phosphorus. Is it then calcium? Again the answer is, No. Injection of the purified material *plus* calcium chloride is quite ineffectual in producing thrombosis; and analysis of the ash, both of the purified and the unpurified substance, is either entirely free from calcium or contains only imponderable traces. The only other alternative which suggested itself to us was whether purification had removed the nucleic acid. The proteids are substances which are prone to undergo intramolecular rearrangements, and it is quite possible that this occurs on frequent precipitation and solution. The idea that the nucleic acid is split off from the proteid proper during these processes was by no means improbable, especially as Dr. Starling called our attention to the fact that Wooldridge found that his "tissue fibrinogens" lost their activity after purification. Now, repeated treatment with acetic acid (which is Wooldridge's method) would perhaps result in displacing a weak acid like nucleic acid, and there is no *a priori* reason why repeated treatment with water and sodium chloride should not do the same. Accordingly we put the hypothesis to the test of experiment. We have not yet had time to perform many analyses, but so far the result has been again negative. The so-called pure material contains the same percentage of phosphorus as the active substance. If, therefore, we wish to avoid the unsatisfactory conclusion that what we have removed is an intangible and shadowy substance known as a ferment, it is necessary to fall back on the other hypothesis and consider whether in the process of purification we have added something to the nucleo-albumen. A few days ago at the Physiological Society Dr. Haycraft suggested that by the repeated use of salt we have obtained an inactive sodium chloride compound of the proteid. This will have to stand or fall by the test of analysis, but it appears to me to be a very probable explanation.

All observers are agreed, with the exception of Dr. Wooldridge, that these corpuscles play an important part in the coagulation process, and we can hardly doubt that the fibrin ferment or nucleo-albumen which causes blood to clot when it is dried originates from the leucocytes. And here I would emphasise the importance of comparisons between vertebrate blood and the blood of the crustacea. Hardy[1] has recently shown that here certain corpuscles which he very appropriately designates the "explosive" corpuscles yield the fibrin ferment; and Griesbach[2] has accentuated this point by showing that agents which, like osmic acid, prevent the explosion of the corpuscles, lead to a loss of coagulability. Now it struck us on reading Pekelharing's papers and on performing our own experiments that they did not definitely prove that the ferment is actually formed from the foreign proteid introduced into the circulation. It appeared quite possible that the ferment may, at any rate in part, originate from the disintegration of blood corpuscles within the blood stream. Buchner has devoted a great deal of study to the protective proteids or alexines. Like Daremberg, he finds that these substances are not merely bactericidal but also globulicidal, that is they produce not only disintegration of bacteria but of blood-corpuscles also. Now that we know that the alexines are nucleo-albumens, it appeared probable that their globulicidal properties would partly explain intra-vascular clotting. On the other hand, we know that substances like distilled water, which produces extensive disintegration of the corpuscles, never cause thrombosis. Now, our solutions of nucleo-albumen do produce extensive disintegration of corpuscles. Testing the matter on a slide with a drop of human blood, we saw that the red corpuscles were made irregular in shape and to a slight extent dissolved. The white corpuscles are broken up immediately and form first a mass of adherent particles, which then separate and look just like "Blutplättchen." But exactly the same result is obtained with solutions of the purified material which produce no thrombosis, and very nearly as extense disintegration is produced by the sodium carbonate-solution which we use as the solvent of the proteid. Counting-experiments performed on rabbits led us to the same conclusion. Injection of the nucleo-albumen produced a slight loss of red corpuscles. This is evidenced also by the slight cakiness of the blood often seen. The loss of white corpuscles is much more marked, being from 90 to 100 per cent. The loss from injection of a corresponding volume (20 to 50 cc.) of sodium carbonate (5 per cent. solution) alone is nearly as great—75 per cent. The loss always chiefly falls on the multi-nucleated corpuscles. We have thus something more to reckon with than mere destruction of leucocytes, and we can hardly resist the conclusion that it is the foreign material introduced into the circulation that furnishes the active substance that produces thrombosis.

We should not have pursued the matter further if a remarkable series of papers by Löwit[3] had not at this stage of our work fallen into our hands. He also has used rabbits in his experiments, and he finds that many reagents which, when intravenously injected, cause leucocytosis produce as

[1] Journal of Physiology, vol. xiii., p. 105.
[2] Pflüger's Archiv, l., p. 473.
[3] Studien zur Physiologie und Pathologie des Blutes und des Lymphs. By M. Löwit. Jena: G. Fischer. 1892.

an immediate primary result leucolysis or destruction of the white corpuscles, especially of the multi-nucleated ones. The reagents he found which acted in this way were—albumose, peptone, pepsin, nucleic acid, nuclein, leech extract, pyoganin, tuberculin, curare, urea, uric acid, and sodium urate. Now Löwit is a strong supporter of Schmidt's views on the preponderating influence of disintegrated leucocytes in bringing about blood coagulation. At the same time he strongly contests Lilienfeld's view that the nuclei participate in the process. He therefore asks why it is that if all these reagents cause leucolysis they do not cause thrombosis, and concludes that what is wanting is the calcium. He accordingly injected calcium chloride either before or after the injection of these other substances and states that he never failed to produce intra-vascular clotting in this way. In our repetition of these experiments we have followed Löwit's directions very closely; we have not been through his entire list, but we have used Witte's peptone, Grübler's peptone, leech extract, curare, urea, uric acid and sodium urate. We have confirmed his results in so far that calcium chloride alone does not produce intra-vascular coagulation; the blood when shed, however, coagulates very rapidly. We found that the same result followed when the calcium chloride was used in conjunction with peptone, leech extract and the other substances just named. With one exception, in some twenty experiments we never got a trace of intra-vascular clotting. The one exceptional case was when we used a peptone solution that had undergone putrefaction, and the result might therefore be attributed to the nucleo-albumen in the bacteria themselves. We, however, failed to repeat the experiment in other rabbits with the same solution. That introduces us to another difficulty we have met with—namely, the idiosyncrasies of the rabbit tribe. A solution which produces coagulation in one animal may fail to do so in another, and it appears that the dark-coloured rabbits are more prone to undergo intra-vascular coagulation than albinos. In connexion with these same experiments I may mention that we found that substances like leech extract which prevent blood coagulation are directly antagonised by solutions of nucleo-albumen; and after the injection of the first the latter still causes intra-vascular coagulation.

Our work, then, has not confirmed that of Löwit, and shows that something else besides leucolysis must occur in order to produce thrombosis. Wright has more recently found that extensive destruction of the leucocytes follows peptone injection. A possible objection to these observations is that the leucocytes may not be actually destroyed, but they run together and get packed away in some organ like the spleen. This view is confirmed by the fact that if one performs the experiment of allowing peptone solution to run into a drop of freshly drawn blood on a microscope slide no destruction of leucocytes is observable. But the phenomena of extra-vascular blood are often so different from what occurs in the vessels that it is not safe to draw inferences from one to the other. We must await further experiments before this matter can be considered settled.

To return now to a question which I have already mentioned—namely, the so-called "negative phase" which sometimes follows the injection of nucleo-albumen. It was first observed by Wooldridge, and more recently confirmed by Wright, that if the blood is not coagulated by the injection it undergoes clotting when shed with great slowness. Wright's hypothesis to explain this is that the nucleo-albumen injected consists of two parts, one the nuclein, which produces the clotting, and the other is a peptone-like substance which hinders clotting. The negative phase is explained by supposing that the "peptone" moiety is split off in the circulation and produces there the well-known effects of the intra-vascular injection of "peptone." This is supported by the observation that in these animals "peptone" is found in the urine, and further supported by the experiments of Pekelharing, who demonstrated the existence of peptone in the blood under similar circumstances.

In a previous paper[4] I urged that it was not proven that the "peptone" actually originates from the foreign proteid injected, because the nucleo-albumens fail entirely to give any of the peptone or proteose reactions. I think it much more probable that the peptone originates from the disintegration of leucocytes. Peptonuria ordinarily occurs in suppurative diseases where there is a great deal of disintegration of leucocytes, and I thought one might obtain some light on the subject by the injection of non-proteid materials, such as curare or urea, which produce leucolysis. In rabbits, however, one seldom sees the negative phase, and perhaps our results differ from Wright's because he has chiefly used dogs. We have searched for peptone in blood and urine by Devoto's modification of the ammonium sulphate method, and in some cases by the use of the trichloracetic acid method. This reagent precipitates all the proteids except proteoses and peptone. Our results are as follows: (1) After the injection of nucleo-albumen, peptone was never found either in the blood or urine; (2) There is no difficulty by either method of recognising "peptone" after intra-vascular injection of small quantities of that substance. (3) After the injection of non-proteid leucolytic agents there is also no "peptone" discoverable by Devoto's method. There were, however, in some cases traces formed by the trichloracetic acid method after injection of curare and of calcium chloride. I must confess that these experiments do not throw much light on the subject, but as far as they go they tend to support the hypothesis that the "peptone" found by other observers originates rather from the destruction of leucocytes than from the foreign material introduced into the circulation.

Since writing the above, a paper has been sent to me by Lilienfeld,[5] which bears on this same question. He takes much the same view of the matter as Wright. He calls the substances I have called nucleo-albumens nucleo-histons, on account of the supposed resemblance between the proteid moiety of the substance and "histon," the peptone-like material obtained from nuclei by Kossel. He lays it down as a general rule that substances which hinder intra-vascular coagulation do so either in virtue of the "histon" they contain or the histon they produce by the disintegration of leucocytes; and that substances which produce intra-vascular coagulation do so in virtue of the nuclein they contain or because they cause the liberation of nuclein by the disintegration of leucocytes. If both substances are liberated together the nuclein is the more powerful as a rule and produces coagulation in histon-plasma. From our own experiments I can fully confirm Lilienfeld's views as to the importance of nuclein. I do not regard it as at all necessary, however, to imagine that the nuclein must originate from the nucleus, as the cell protoplasm also contains nuclein in the form of nucleo-albumen. The blood-platelets have long been known to have some important bearing on blood coagulation. If the clotting of a microscopic preparation of blood be watched, the fibrin strands are seen to start from groups of the platelets. What blood platelets are has been the subject of much discussion and innumerable theories. I have no wish to add another theory, but will be content with pointing out that the experiments I described on the influence of nucleo-albumens in destroying white corpuscles, and forming from them what look like platelets, favour the theory that these little bodies are the disintegrative products of the leucocytes. Lilienfeld takes the same view, and his micro-chemical method, which shows they are composed of a phosphorus-rich substance, and his further work,[6] in which by gastric digestion he has separated them into nuclein and albumen, adds strong confirmation to this idea. Thus we are brought back once more to the subject of the disintegration of leucocytes, and I will conclude what I have to say on the subject of blood coagulation by a few general remarks on that question.

It was Schmidt who originally taught the importance of the destruction of leucocytes as the main cause of coagulation. These corpuscles are exceedingly prone to undergo changes when exposed to altered conditions; but a considerable change has come over our notions on the subject since that view was first promulgated. Rauschenbach, one of Schmidt's pupils, recognising that numbers of corpuscles do not disintegrate, spoke of α leucocytes which are acted upon and disintegrated by the plasma when the blood is shed, and β leucocytes which remain unaltered. Some very remarkable experiments published within the last few months by Dr. Sherrington,[7] who has succeeded in keeping leucocytes alive outside the body for several weeks in oxalate plasma, have been very strongly against the idea that they are specially prone to disintegrate. The word "disintegration" does not, however, mean complete destruction and disappearance of the corpuscles in question. It signifies merely retrograde changes that end in the death of the corpuscles. Hayecraft regards these changes as being due to mechanical stimulation of living and naked protoplasm by foreign solid matter, for if the fluid after being

[4] Journal of Physiology, 1892, p. 820.

[5] Verhandlungen der Physiologischen Gesellschaft, Berlin, 1891-92, No. 16.

[6] Chemisches Centralblatt, 1892, II., 82.

[7] International Physiological Congress, Liége, 1892.

shed is surrounded by a fluid-like oil coagulation is prevented. By watching the corpuscles under the microscope he has shown that they become flattened and irregular; they then lose their granules, or these retire to one part of the cell, leaving the rest clear. Such changes are better marked in the coarsely granular corpuscles than in the finely granular ones. He regards the shedding out of the fibrin ferment which accompanies these changes rather as a process of metabolism than of disintegration. I am inclined to adhere, however, to the old word disintegration, as what goes on is something different from what occurs in normal metabolic processes. As I pointed out some years ago, the disappearance of the granules from the cells inevitably suggests a comparison between the process and secretion, in which the shedding out of a ferment by secreting cells is accompanied by the disappearance of the granules which indicate the existence of its zymogen, or mother substance. This idea has since been verified by the discovery of the zymogen of fibrin ferment, and so strongly has the resemblance to secreting cells been recognised that some have gone so far as to speak of the coarsely granular or eosinophile cells as unicellular glands having a different origin and function from the neutrophile or finely granular cells which appear to be the principal phagocytes. Hankin[8] has arrived at the conclusion that the alexines or protective proteids which confer bacteria-killing power on blood serum originate from the eosinophile cells, and this bears upon our present question because of the similarity, or it may be identity, between fibrin ferment and the alexines. There is, however, evidence that cells which are not eosinophile may yield fibrin ferment. The explosive cells in crustacean blood are hyaline, not eosinophile. (Hardy.) According to Sherrington, too, the eosinophile cells are not fibrino-plastic. I think it would be premature to lay down any definite rule as to which group of corpuscles fibrin ferment comes from; and further, seeing that substances which produce coagulation can be obtained from cells as diverse as those in the thymus, brain, liver, testis and kidney, it seems very probable that both kinds of leucocytes in the blood may give rise to fibrin ferment; they both consist of protoplasm, and the main proteid constituent of all protoplasm is nucleo-albumen.

During these lectures I have from time to time stepped aside from my subject proper in order to point out certain practical bearings which I considered to be of importance. I wish that I had had time, and still more the necessary experience, to have done so more fully. If, however, any grains of usefulness are scattered through what I have said, there is no doubt that others will pick them up and work out their practical side. In connexion with blood coagulation and thrombosis I need not stop to point out the immense importance of a correct knowledge of this subject to the pathologist, and I will content myself with two remarks only on its practical aspects. The first of these is to point out the great resemblance between the phenomena observed in the animals in the experiments described and those cases of pulmonary thrombosis which are occasionally seen in the human subject. One can hardly doubt that here we have to deal with poisoning by the same material. Professor Gerald Yeo was witnessing some of our experiments a few days since, and he described to me a case he had had in King's College Hospital.[9] It was one of amputation of the breast for cancer, and the wound was perfectly aseptic; but ten days after the operation, without any warning, the patient died suddenly with great dyspnœa. Examination of the brain revealed no lesion, but at the necropsy a firm fibrinous clot was drawn like a tree with its branches from the pulmonary artery. The dyspnœa in this and similar cases points to the cause of death in the lungs themselves rather than in the respiratory centre; this difference is easily explicable on the ground that the dose of poison enters the circulation more slowly than in our experiments where it is injected. The second practical point which I wish to emphasise is a word of warning. When I have seen animals die in a few seconds, as though by a lightning flash, after a dose of five cubic centimetres of this poison, which could not have contained more than a few centigrammes of the material, I feel very loth to urge that any practical use of such substances should be made in the human subject, either for the stoppage of hæmorrhage or for the production of a clot in aneurysms. The cure would in such instances be worse than the disease.

[8] Centralblatt für Bacteriologie und Parasitenkunde, Bd. xii., Nos. 22 and 23.

[9] Many similar cases will be found in Sir J. Fayrer's Clinical and Pathological Observations in India.

A CASE OF ACROMEGALY.

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THE subject of the following notes first came under the observation of Dr. Alexander Campbell and myself in September, 1890, on account of ingrowth of nails on both her great toes. My description was taken down at that time, but, as it has recently been verified and slightly added to, I shall speak of her as she is now, merely premising that no alteration of any importance has occurred during the past two years. She is a domestic servant, single, aged twenty-seven, and enjoyed good health, being strong and fit for her work till 1886. Her family history throws no light on the case. The mother is alive and healthy, of slight build, and below the medium size. The father died of paralysis five years ago, aged seventy. The maternal grandfather lived to be eighty years of age; the maternal grandmother died of "dropsy," aged fifty. The paternal grandparents died in old age. A sister and two brothers are alive and healthy; the youngest brother died of typhoid fever twelve years ago. From her personal history syphilis and alcoholism can be absolutely excluded, and her surroundings have always been favourable to health. Fig. 1, engraved from a photograph taken in 1884,

FIG. 1.

Engraved from a photograph taken in 1884 before onset of illness.

shows her to have been then rather slim in build, with a bright expression, thin lips and other features, and small, well-shaped hands. About the time of onset of her present illness, namely in 1886, she was subject to certain depressing emotions. In that year she observed that she became more easily fatigued, and in the course of a few months great physical changes occurred. Menstruation, which had begun at fourteen and been normal hitherto, became scanty and in six months finally ceased. Her body became stouter, so that with her ordinary clothing breathing was greatly impeded. To get up from the kneeling posture she had sometimes to roll over on her side. Her face changed to such an extent that friends who had not seen her for some time failed to recognise her. The size of her gloves increased steadily from No. 6½ to No. 8, and her shoemaker was troubled with the difficulty of procuring "tops," remarking with somewhat ungallant candour that he had never known a woman to have so large a foot. The actual increase in the size is given as from No. 4 to No. 7. Profuse perspirations, violent headaches occipital and frontal, and a feeling of stiffness as if she was encased in starch were amongst her troubles. The various changes seem to have been coincident, although the muscular weakness first attracted her own attention. In spite of her physical disability she managed to keep her "places," being possessed

of an agreeable disposition and an indomitable spirit of independence.

Present condition.—Her general configuration is stout and clumsy; her expression when speaking is intelligent and cheerful, otherwise (see Fig. 2) heavy and dull. One is struck by the large size of her head and face, and also of her hands. Height, 5 ft. 4 in.; weight, 11 st.

Head and face.—The head is much larger than normal (see measurements below); the occipital protuberance is pronounced; the lambdoidal suture is well marked, but the other sutures and protuberances are not specially prominent, with the exception of the supra-orbital ridges, which give a receding aspect to the brow. The hair is abundant, dark-brown and of normal quality; the ears are normal in size, the tissue perhaps is thickened; the complexion is pale; there are shallow horizontal wrinkles on the forehead. The eyelids are heavy; the nose is straight and large, with a slight upward curve near the tip; the alæ are thick; the lips are thick, the lower one being heavy and hanging; the mucous membrane of the lips is normal; the lower jaw is large and the chin double; the angles of the inferior maxilla are more obtuse than normal; the lower teeth lie in normal relation to the upper; the teeth are very bad and have been so since she was sixteen years of age—there are small gaps between them. There is a small metal plate in the upper jaw

FIG. 2.

with four incisors and the left canine; this was put in eight years ago and suited; now it is loose and there is room for another tooth beside the right canine. The hard palate is flat and extensive; the soft palate and pharynx are flat and extensive in proportion. The tongue is broad (6 cm.) but not markedly thicker than it should be; it is slightly cracked and fissured and indented by the teeth at the edges; the patient feels as if it were uncomfortably big, especially when speaking. She has had this feeling since she had an inflamed sore-throat three years ago. The voice is rather husky; she was a fairly good singer, but now the voice has deteriorated in quality and also in range of pitch (being lower by two notes); the pomum Adami is not prominent; the thyroid gland is larger than usual, both lobes being easily felt.

Trunk.—The antero-posterior curvature in the dorso-cervical region with its concavity to the front is very marked; also in the upper dorsal region there is slight right lateral curvature. The patient is very quickly tired if she tries to hold her head erect. The ribs are broad, the costal cartilages and sternum are normal; the circumference at the nipples is thirty-five inches and a half on expiration and thirty-seven inches on moderate inspiration; the pelvic bones seem normal; the breasts are poorly developed and have always been so; the cardiac dulness is normal; there is a small area of dulness, the size of a crown piece, behind the manubrium and the first left costal cartilage.

Upper extremities.—The clavicles are thick and long; the scapulæ and humeri seem normal; the arms are well-formed down to the wrists; the wrists, and especially the hands, are greatly enlarged; the hands are very inelegant (see Fig. 3), being thick and broad; fulness is specially developed in the hypothenar eminences; the markings on the skin are normal; the veins on the back are easily seen; the thickening seems to involve the bones as well as the subcutaneous tissue, the lower ends of the radius and ulna participating; the fingers have a stumpy appearance, not tapering, or only very slightly, as shown by measurement; the nails of the fingers are flattened out, slightly curved for-

FIG. 3.

wards in the terminal third and much broader in proportion to length than is normal; the thumbnail is an ellipse with the long axis transverse; the nails used to crack unpleasantly, the outer layer peeling off; there is no abnormality in consistence during the past two years.

Lower extremities.—The right knee is occasionally painful, especially after kneeling; a little crackling is felt in the joint on flexion; recently there was an attack of housemaid's knee on the left side; the bones and other tissues down to the ankles are increased in bulk; the feet are comparable to the hands in size and clumsiness (Fig. 4); there are no callosities

FIG. 4.

and there is a general thickening and enlargement. The big toes gave much trouble till operated on in 1890, through ingrowth of the nails; this, of course, was owing to the difficulty in getting large boots. The toes have a compressed appearance and would be square on section; the nails are like little ellipses with the long axis transverse and are embedded in the skin; there is a tendency to flat-footedness.

Muscular system.—This is to all appearance well developed; the grasp of the hands is very much less than normal; the muscles at the elbow and knee seem about normal; lifting heavy weights gives a sensation of train in the upper dorsal

region and up the back of the neck; the general activity is greatly impaired; the gait is clumsy.

Nervous system.—The special senses are normal, with the exception of sight. Dr. M'Gillivray kindly examined her eyes for me, and he gives the following exhaustive report: "Nov. 14th, 1890.—The patient feels pain in the eyes, with frequent attacks of frontal headache; she complains of dimness of vision and great difficulty in reading, as the letters jumble up; she first noticed that her sight began to fail about a year after the onset of her present illness; up to that period her eyes had been perfectly well. There is slight hyperæmia of the palpebral conjunctiva and thickening of the eyelids in both eyes; there is no exophthalmos; the pupils are normal in size and react well to light and accommodation; the movements of the eyeballs are normal except for a jerky rotatory nystagmus when the patient tries to look to the right and left, but less marked in the former direction; pressure backwards on the eyeballs conveys no cushion-feeling to the fingers and causes no pain to the patient; tension is normal. Vision: Right and left eye $= \frac{6}{9}$ c. + 1 D. cyl. $= \frac{6}{5}$. She reads Jaeger 1 at eighteen centimetres with the right eye, and Jaeger 1 at twenty-one centimetres with the left, for a few seconds only. The range of accommodation is very limited. With the above correction the range of accommodation is improved. At twenty-five centimetres there is marked insufficiency of convergence; there is no diplopia; the fields of vision are normal, as also are colour and light sense. Ophthalmoscopic examination shows no abnormality. Feb. 10th, 1892.—The patient was re-examined. There is no alteration in the above symptoms except that the patient thinks the vision is improving and the headaches are less frequent and not so severe. Spectacles were not prescribed."

General sensibility.—The patient experiences a sensation of numbness in the fingers in the morning, lasting from ten to thirty minutes. The fingers feel dead, but do not change colour. The sensation of touch is then greatly impaired or lost. On the outer side of the right thigh from above the knee to near the hip she experiences occasionally a tingling sensation, especially if tired after standing. Slight pressure causes a painful feeling at those times, but firm rubbing gives relief. The sensation is not that of "sleeping." She cannot bear tight bands about the body. She has, as noted in the history, been a martyr to headaches, but these have been much less severe during the past year and generally yield to antipyrin. She can go to sleep at any time, day or night. Since the onset of her illness she has been very nervous, being easily startled and being then affected with palpitation and a breaking out of perspiration. There is no mental deterioration.

Skin &c.—The skin is rather coarse. In the region of the neck there is a large number of small warts, varying in size from that of a pinhead to that of a millet seed (they seem to be simply cutaneous); perspiration is constant, especially in the palms of the hands and the soles of the feet (it has become rather worse during the past year); the appetite is normal, but temporarily affected by headaches; thirst is great, but the urine is normal in quantity and is free from sugar and albumen; the pulse is 60, regular, and of fair strength; the heart, lungs and other organs are normal.

Measurements in centimetres.—Circumference of head, 57·5 cm.; occipito-frontal diameter, 18·5 cm.; bi-parietal, 15 cm.; bi-mastoid, 11·5 cm. Length of ear, 6 cm. From the roots of the hair to the tip of the nose, 13 cm., of which the nose measured 6 cm. Breadth of nose at alæ, 5 cm. Inferior maxilla from angle to angle, 21·5 cm.; length of ascending ramus, 3·2 cm. Circumference of neck at the thyroid isthmus, 36·5 cm.; length of the sternum, 21 cm. Circumference between umbilicus and xiphoid, 80 cm. Distance between anterior superior spines, 28 cm. The clavicle of the right arm, 15·5 cm.; tip of acromion to point of the mid-finger, 67 cm.; circumference of arm at top, 31 cm.; at middle, 29 cm.; above elbow, 26 cm.; at elbow, 28 cm.; circumference at mid-forearm, 23 cm.; at wrist, 18 cm.; length of hand from lower wrist-crease to tip of mid-finger, 18·5 cm.; circumference at metacarpo-phalangeal joints, 23 cm.; thumb length, 6·4 cm.; circumference, 8 cm.; index circumference at root, 7·8 cm.; at first joint, 7·8 cm.; at second joint, 6·8 cm. Right lower limb: Length of femur, 45 cm.; vertical diameter of patella, 6·5 cm.; transverse diameter, 7·3 cm.; circumference of knee, 37 cm.; of calf, 37 cm.; length of tibia, 35 cm.; circumference round malleoli, 26 cm.; over heel and front of ankle, 32·5 cm.; at first metacarpo-phalangeal joint, 23·5 cm.; length of foot, 25·5 cm.; circumference of great toe at root, 9 cm.; at nail, 9·5 cm.

Remarks.—The case is clearly one of acromegaly, typical in its onset and its present aspect. The diagnosis could be made with positive certainty from the history alone, the alterations in fit of gloves, boots and tooth-plate being conclusive. This patient is not so extreme a case as are many that have been described, the absence of prognathism to any great extent being of importance in allowing a natural expression to remain. The comparatively short duration of the malady and the present arrest of its progress are worthy of attention in this respect. It is easy to see how this disease remained unrecognised till Pierre Marie pointed out the features which distinguish it. Such a patient as the above goes on long enough satisfied with her friend's diagnosis that she is getting stout &c., simply taking medical advice on one or two common symptoms. Further, there is a misleading symmetry about the enlargements in most cases. The tongue, for example, is absolutely large and is indented by the teeth, but it lies fairly easily in the very capacious mouth. The facial part of the head is in proportion to the cranial, and the neck and trunk are correspondingly stout. The hands and feet again, whilst large, both absolutely and relatively, in comparison to the rest of the limbs, are, as Marie said in his original paper, in themselves regularly formed. Still, an attentive examination of their shape, especially the want of proportion between breadth and length and the "sausage" look of the fingers, makes one see that they would be unnatural even to a giantess. As the total number of cases of acromegaly as yet described is under fifty, I hope that the above record will have a certain value.

Airlie-place, Dundee.

THE CHOLERA EPIDEMIC IN RUSSIA.

BY FRANK CLEMOW, M.D. EDIN. &c.

No. II.—IN THE CAUCASUS.

GEOGRAPHICALLY the great mountain chain of the Caucasus is generally considered to be the dividing line between Asia and Europe; but administratively the whole of the Caucasus, including a considerable portion of the steppe lying to the north of the mountain chain, is included in Asiatic Russia. In the last article the cholera epidemic was traced throughout the Central Asian provinces and Siberia from its first introduction to Russian soil at Kaachka. In the present it is proposed to deal with it in the Caucasus in a similar manner. The Caucasus occupying the stretch of country between the Black and the Caspian Seas has a superficial area but little smaller than that of France or Spain. It is continuous on the north with the country of the Don Cossacks, from which it is separated by two small rivers; whilst on the south another river — the Araks — forms the natural boundary between this part of Russia and Persia. The country is further clearly divided into two parts, not only by an administrative division, but by marked geographical differences, which played an important part in affecting the relative intensity of the cholera epidemic in the two districts during the past summer. The Northern Caucasus is, for the most part, a flat but fertile steppe, watered by few and sluggish streams, and in part by artificial irrigation canals; but at its southern edge, as it approaches the mountainous region of the Southern Caucasus, the character of the country changes. It becomes sub-mountainous, with rapid streams flowing into the channels of the rivers Terek and Kuban. The Terek flows into the Caspian Sea, the Kuban into the Black Sea; neither receives any tributary from its northern bank, both being fed entirely by the mountain streams from the south. The Southern Caucasus, or Transcaucasia, is in many respects in marked contrast with the northern division of the country. Briefly, it consists of a series of immense mountain chains, culminating in the peaks of Elbruz and Kazbek, and watered by innumerable rushing streams, which mostly unite to form the channels of the River Kura, flowing eastward into the Caspian Sea, and of the River Rion, which empties itself into the Black Sea. That elevation has an important influence in modifying the intensity of a cholera epidemic has been very generally admitted, and is to a great extent supported by the behaviour of the present epidemic in the two divisions of the Caucasus. In general terms the flat, low-lying plains of the Northern Caucasus were very much more severely visited than the high and mountainous regions of Transcaucasia. This is clearly seen from the figures given below. In the three northern provinces, out of every 100,000 inhabitants 2390 were attacked by the disease, whilst in the southern only 1831 suffered.

There is, however, one district which forms an important exception to this general statement, and proves that elevation is not the sole factor that determines the severity of a cholera epidemic. In the hilly province of Daghestan, which borders the Caspian Sea, the proportion of population attacked by the disease was higher than in any other district of the Caucasus. Further, in this province and in that of the Terek, lying adjacent on the north, cholera raged with greater violence than in any other part of Russia, European or Asiatic. From a comparison of the figures in the table with the position of the provinces on the map it will be clearly seen that the cholera epidemic was very much more intense in the eastern districts of the Caucasus than in the western. In the southern division of the country this difference was very marked. In the province[1] of Daghestan and the government of Baku, lying on the east, the proportion of cases per 100,000 inhabitants was, in the first, 3911; in the second, 1593. In the government of Kutais, lying on the Black Sea littoral, the proportion was represented by the insignificant number of 6, whilst the intervening governments were affected in ratios varying from 726 in Tiflis to 1344 in Kars. The same gradation appears in the northern Caucasus. The numbers in the three districts, into which this part of the country is divided, were as follows: In the easterly province of the Terek and of Stavropol in every 100,000 inhabitants there were respectively 3383 and 2115 cases of cholera, whilst in the westerly province of the Kuban there were only 1911. This difference may have been partly due to the intensity of the epidemic becoming weaker as it travelled further; but it is not uninteresting to note that there is a considerable difference in level between the eastern and western coasts of the Caucasus, the whole country trending downwards from the Black Sea to the Caspian Sea. The average level of the Caspian Sea has been estimated to be 85·45 feet below the level of the Black Sea.[2] It would be asserting too much to say that in this difference in level is to be found the sole explanation of the difference in intensity of the cholera epidemic, but it is at least an interesting and suggestive coincidence if nothing more.

The climate of the Caucasus is most varied. Owing to the mountainous nature of a great part of the country almost every degree of temperature may be experienced by the traveller in simply passing from shore to shore. The heat in summer, particularly in the northern steppes, is often very great, and the cold in winter is frequently extreme. In many parts a difference of as much as 60° or 70° F. is observed between the *average* temperatures of the hottest and coldest months, whilst the range between the *absolute* maximum and minimum may be nearly twice as great. The inhabitants of the Caucasus are as varied as the climate. The country has been proverbial from the time of Pliny for its confusion of tongues. Great as is the number of races, it appears to be greater from the fact that every tribe is known by a different name to each of its numerous neighbouring tribes, the names being thus multiplied many fold. A further confusion arises from the existence of many dialects in a single language, the Armenian alone being said to possess no less than twelve. The majority of the inhabitants of the mountainous regions is made up of Armenians, Georgians, Ossetins, Kurds, Turks, Turcomans, Tcherkesses, Tchetchentsy, and Kalmuck and Nogai Tartars, in addition to the Russian population that has settled there since the country came under the rule of the Czar. In the steppes the population consists almost entirely of Cossacks of the Terek and the Kuban. The larger number of these races lead a half-settled, half-nomadic life, occupied partly in agriculture, partly in pasturage, and partly, though now to an insignificant extent, in brigandage and robbery. Their social customs and their religious prejudices have probably each played their part in assisting the wide spread of the recent epidemic. I take their social customs first. Throughout the Caucasus there is no system of drainage, the "Persian" or "dead well" being the sole method in use for disposing of sewage matter. These, as described before, are very deep wells or holes in the ground, which are gradually filled with human excrement. The harmful effect of this system has been pointed out in the Annual Report of the Medical Department. The accumulation of such enormous masses of human excreta in the earth and the consequent pollution of the soil have gone so far, the report states, that a foul odour is observable in the basements of many houses and in some ice cellars in towns where this system is in use. In the flat plains of the Northern Caucasus it is easy to understand how the wells or springs, which are the sole source of the water-supply, may become contaminated by this method of disposal, or, rather, preservation of sewage.

The houses of most of the hill population are flat-roofed *saklii* or huts, badly built of wood, stone or clay, and in many cases very much more than half underground. On the high table lands throughout nearly the whole of Transcaucasia the Georgians, Tartars and Armenians live in the so-called *zemlianki* or underground "earth huts." Dwelling at a height of some thousand feet above the sea, where the thermometer in winter may fall to 30° or 40° below the Fahrenheit zero, such houses provide the greatest amount of warmth at the smallest cost. A short description of one of these dwellings, taken from the Journal of the Imperial Caucasian Medical Society, may be of interest. Each house always contains more than one room and may sometimes form a labyrinth of rooms connected by passages. The floor is generally about one sajene (seven feet) below the surface of the earth. The roof is about two feet above the surface and is covered with brushwood and then with a thick layer of earth. A few small openings exist in the roof for the admission of light and air, but in winter these are almost invariably closed at night to keep in the warmth. There is generally one door leading to the men's rooms and a second to those occupied by the women, who, as in all Mohammedan countries, live apart. In the centre of the establishment there is generally one large room devoted to the cattle, which share the same roof as their masters for at least six months in the year. In the living rooms there is generally a hearth in which dried cow-dung is used as fuel. In such a house the Caucasian Highlander spends at least half the year, in an atmosphere that, to anyone not used to it, is quite intolerable. Heated by the fires and by the warmth of the cattle, almost unchanged by ventilation, polluted by the breath and by the exhalations from the bodies and from the excreta of many human beings and of a number of cattle, varying from units up to hundreds, the air becomes fouled to such an extent that it seems incredible that life can be supported. Dr. Uspenski, a Russian who was forced by stress of weather to seek the hospitality of the owner of one of these dwellings, relates that the atmosphere was so unbearable that, notwithstanding that a fearful snowstorm was raging outside, he was obliged to rise, mount his horse and face the weather as being the lesser evil of the two. The cattle suffer terribly from the confinement and when let out in the spring are little more than living skeletons, as the result of the darkness, want of exercise, scanty food and foul air. The soil must be no less foul than the air; the "dead well" receives the human excreta and the surface of the earth must be considerably polluted by the excreta of the animals, although these are carefully collected every day in order to serve as fuel. When it is added that the well which affords the sole water-supply is usually under the same roof, it is obvious that to polluted air and polluted soil must be added polluted water. That people living in such surroundings were severely visited by the cholera epidemic is not surprising. If unhygienic domestic conditions seemed to invite the introduction of the cholera infection, religious prejudices were doubtless powerful aids in propagating it. The predominant religion in the Southern Caucasus is Mohammedanism, professed by 48 per cent. of the inhabitants; members of the orthodox Greek Church form 29 per cent., Armenians 20 per cent., and the remainder is made up of Russian sectarians, Roman Catholics, Jews and followers of other faiths in insignificant numbers.

The fatalism of Mohammedans is proverbial and must have had much to do with the spread of cholera in a country where nearly half the population are followers of the Prophet; whilst their religious objections to seeking medical aid, their peculiar rites in disposal of the dead, and their occasional inflictions of self-torture must have been powerful factors in disseminating the epidemic. Scarcely less fatalistic than the Mohammedan is the Russian sectarian. Of the Cossack population of the Northern Caucasus more than half belong to one or other of the numerous sects of the *Raskol* or Dissent. Many of them are descendants of dissenters exiled to the Caucasus by the Emperor Nicholas for refusing to disclaim their heretical opinions and subscribe to the Orthodox Church. Whilst some, as the Molokany and Dukhobortsy, are rationalistic in their tenets and live a quiet industrial life, others, as the Khlysty, are highly fanatical, their so-called services being in many cases merely disgusting exhibitions of sensuality. The prevailing disease in the Caucasus is malarial fever, but the cause of the greatest

[1] The Russian administrative terms "oblast" and "gubernia" are here rendered province and government respectively.

[2] This fact was established by the scientific expedition sent by the St Petersburg Academy in the years 1836-37.

number of deaths is gastro-intestinal catarrh, connected, it is supposed, with the frequently polluted water-supply and with the custom of the inhabitants of eating large quantities of unripe fruit and vegetables. The prevalence and fatality of gastro-intestinal catarrh are by no means confined to this part of Russia. It is responsible for a larger total of deaths than any other single disease or group of diseases in almost every town throughout the empire. In the six towns—St. Petersburg, Moscow, Vilna, Saratof, Odessa and Baku—which may be taken as fairly representing all parts of European Russia and the Caucasus, in the three years 1887–89 there were 41,649 deaths from this one disease; from the next most fatal group of diseases, those of the respiratory organs, there were 31,821 deaths; and from tuberculosis, 27,916. This widespread existence, particularly during the summer, of gastro-intestinal catarrh is a fact of the first importance in the epidemiology of cholera in Russia, and probably in it is to be found the reason why the cholera infection, once fairly introduced into the country, has generally spread unchecked throughout the whole of the empire. So long as the cause of it exists, and particularly so long as the water-supply of the towns and villages remains what it is and the local authorities continue indifferent as to its source and purity, the Russian people must form a happy hunting-ground for the cholera bacillus, and in all probability all efforts to check its spread when once it has passed the frontier will be futile.

The cholera was imported to the Caucasus at its most vulnerable point. The town of Baku lies on the coast of the Apsheron peninsula, which juts into the Caspian Sea almost exactly opposite the terminus of the Transcaspian Railway at Oozoon Ada on the east coast of that sea. Between the two ports there is frequent communication; they lie 132 miles apart and the crossing takes about twenty-seven hours. The first cases of cholera occurred in Baku on June 6th,[§] eighteen days later than the appearance of the disease on Russian soil at Kaachka and twelve days later than the first cases in Oozoon Ada.

Baku is a large town that has increased immensely in the last few years. In 1888 the population was less than 46,000; a year later it had nearly doubled itself, and this year the town is reckoned to contain 108,000 inhabitants. This rapid growth is closely connected with the extraordinary development in the trade in naphtha, which is found in large quantities in the neighbourhood. The air reeks with its fumes, and the water of the harbour is covered with a film of it. If one may believe a recent correspondent of a Russian newspaper the naphtha fumes have a disastrous effect on all vegetation. The town, it is said, "contains gardens without grass, trees without leaves, sea without water, and steppes without air, for it is as impossible to call air that kerosene vapour which blows round Baku for many versts as it is to call water that mother-of-pearl-tinted, heavy mud which creeps into the harbour, taking every colour of the rainbow in the sun." The water-supply of Baku appears to be a matter of difficulty. It is obtained from wells, but, lying as the town does on a bare and sandy peninsula surrounded by the sea, the well water is hard, rich in salts and deposits a sediment. The inhabitants of the hills at the back of the town have a much better water-supply from springs and streams. The town has, besides its Russian part, an Asiatic quarter surrounded by old fortifications and inhabited by the poorest of the labouring classes, a population consisting of Tartars and Persians living in a state of indescribable Oriental filth and innocent, it need scarcely be added, of the most rudimentary measures of hygiene or sanitation. It is not surprising that the cholera, when once introduced into Baku, spread rapidly and almost at once assumed serious proportions, especially as few measures of precaution were taken by the local authorities until the disease was well established in the town. Then panic rendered firm or united action on the part of those in power impossible. The hospital accommodation was found to be inadequate, the number of medical men insufficient, and a total absence of disinfectants rendered still more hopeless any efforts on the part of the sanitary officials. All who could fled from the town, the trains were besieged, the stations packed with crowds unable to find room in the trains, shops and factories were closed and business came to a complete standstill. One of the few measures taken by the authorities was that of watering the streets with *mazut*, the refuse from the naphtha refineries, presumably under the impression that it possessed disinfecting properties. Its utter failure in Baku to check the epidemic is a practical confirmation of the experiments of Koch, who found that neither pure petroleum ether nor benzol had any effect on spores exposed to their action for five and for twenty days respectively. During the seventy-eight days that the epidemic lasted in Baku there were 1834 deaths from the disease.

From Baku the infection spread as from a centre. A consecutive itinerary of its course is impossible, as it was not following one line but was appearing at the same time in many towns widely apart. In Tiflis, in Elizavetpol, in Zakataly, in Petrovsk and in many other places the earliest cases were amongst refugees from Baku and preceded by some days cases amongst the residents of those towns. The Transcaucasian Railway, which connects Baku with Batoum and Poti on the Black Sea, was one important channel of infection, but the disease appears to have spread as much, if not as rapidly, by road and sea as by rail. Tiflis, one of the earliest towns affected, lies on the railway about eighteen hours' journey from Baku. With a population of 102,000, it possesses the great advantage of a good water-supply derived from springs in the hills ten versts away and brought to the town by an aqueduct. The water is stated to be remarkably pure, and it is doubtless owing to this fact, together with the high position occupied by the town, that Tiflis suffered so comparatively lightly from the epidemic. The first cases occurred on June 13th and the total number of cases reported was 570 and of deaths 261. On June 14th cases occurred in Petrovsk on board a steamer coming from Baku; on the 16th the disease was reported from Shusha and on the 18th from Elizavetpol. Before the end of June it had reached the Northern Caucasus and cases occurred in the Terek province and the government of Stavropol. Early in July the disease appeared in Erivan and in Kars, and before the middle of the month every district of the Caucasus was suffering more or less severely. In the three northern provinces the epidemic was raging violently, between two and three thousand cases and half as many deaths being reported daily. In the province of the Terek, in particular, the numbers were very high. The capital of this province is Vladikavkaz, important as being the terminus of a line of railway connecting it with Rostof-on-Don.

A little to the north of Vladikavkaz, on the Rostof line, lies the group of inland watering-places which have long attracted crowds of visitors every summer by the fame of their mineral springs. Piatigorsk with sulphurous waters, Essentuki with alkaline, and Jeleznovodsk and Kislovodsk with ferruginous and acid waters respectively form the chief centres. At the beginning of the summer a larger number of visitors than usual flocked to the springs, hoping thus to escape the cholera; but, as the epidemic rapidly spread through the Caucasus and approached within a hundred versts of Piatigorsk, there was a sudden panic. People fled in all directions and the watering-places were speedily emptied.

In the following table the statistical details of the epidemic are given down to Nov. 1st. For these figures I have again to express my indebtedness to the authorities of the Medical Department of the Ministry of the Interior:—

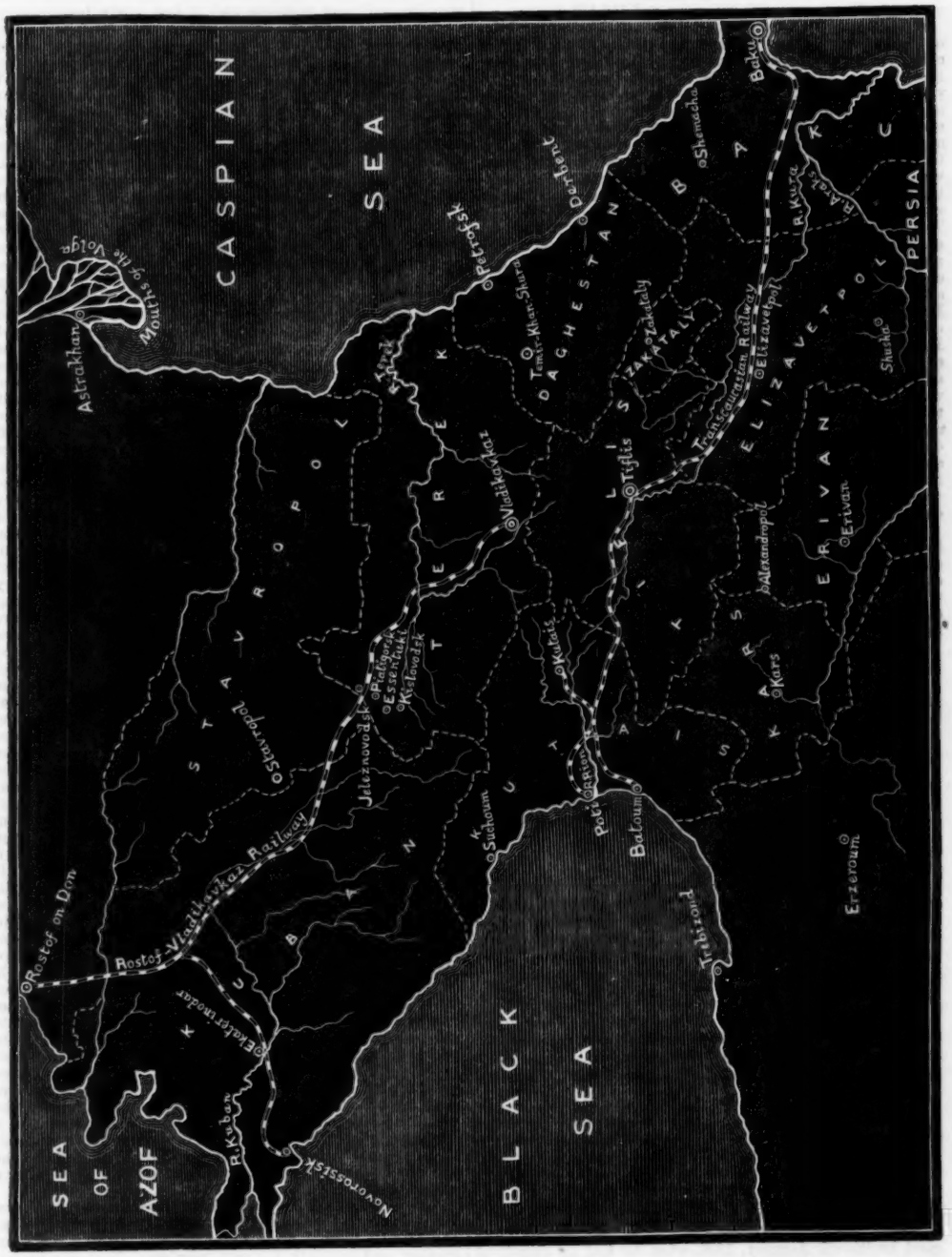
Table of the Cholera Epidemic in the Caucasus to Nov. 1st, 1892 (Old Style).

Province or Government.	Cases.	Deaths.	Per 100,000 Inhabitants. Cases.	Deaths.	Percentage of deaths to cases.
Terek*	27,095	13,127	3,333	1,639	48·5
Stavropol	14,802	7,280	2,115	1,040	49·2
Kuban	28,659	15,045	1,911	1,003	52·5
Total for the Northern Caucasus	70,556	35,452	2,390	1,203	50·3
Daghestan	23,467	10,456	3,911	1,743	44·55
Baku	11,154	6,851	1,583	976	61·25
Kars	2,688	1,203	1,344	601	44·75
Zakataly	988	594	1,308	792	60·0
Erivan	8,939	4,845	1,277	692	54·2
Elizavetpol	9,711	5,684	1,079	632	58·53
Tiflis	5,808	3,032	726	379	52·2
Kutais	470	256	6	3	54·0
Total for the Southern Caucasus	63,225	32,901	1,831	953	52·0
Total for the Caucasus ..	133,781	68,353	2,090	1,068	51·1

§ All the dates mentioned are according to the Old Style.

* To October 15th.

MAP OF THE CAUCASUS.



It will be seen that during the five months from June to October inclusive there were reported 133,781 cases of cholera in the Caucasus, and 68,353 deaths. If to these figures be added those already given for the Central Asian provinces and Siberia, it will be found that the final totals for the whole of Asiatic Russia were 222,956 cases and 115,184 deaths.

It is impossible to enter here into a full account of the measures taken by the Government to check the spread of the epidemic through the Caucasus and so to European Russia. Early in June a large number of circulars were issued by the various Ministers with this object. The majority were general measures applicable to all parts of the country. Of those specially adapted to the local conditions of the Caucasus the most important had reference to the Transcaucasian Railway. On June 12th M. Gratcheff, the senior inspector of railways, was sent to Tiflis by the Minister of Ways and Communications with instructions to form a Commission, consisting of representatives of the line and the local medical authorities. The duties of the Commission were to organise a sanitary service on the railway, to supervise the carrying out of the numerous Government orders for preventing the spread of cholera, and to concert with the local authorities along the line all measures that seemed to be called for to check the epidemic. Before the formation of the Commission the management of the railway had stopped all goods traffic between Tiflis and Baku, and passenger trains were allowed to run only as far as Baladjari, a station thirteen versts from Baku. Additional measures were taken by the Commission. Sanitary waggons were attached to each train, with accommodation for persons taken ill on the journey; provision was made at certain stations for the removal and treatment of such patients, and disinfection was actively carried out on the trains and at the stations. Unfortunately, however thoroughly these measures may have attained their object on the line of railway, this was but one channel by which the infection was being carried. "Like ghosts from an enchanter fleeing," the "pestilence-stricken multitudes" were escaping from Baku in thousands daily, by road and by sea as well as by rail, and it is questionable whether any measures, however active, could have done much to check the course of the epidemic when once the exodus had begun, more particularly in a country where the hygienic conditions are such as they have been seen to be in the Caucasus.

RESECTION OF THE CÆCUM, GREATER PART OF ASCENDING COLON AND FIVE INCHES OF ILEUM FOR MALIGNANT DISEASE OF ASCENDING COLON.

BY D. LOWSON, C.M. ABERD.,

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MR. CARPENTER, the assistant house surgeon to the infirmary, has taken great interest in this case, and I transcribe largely from his copious notes. The main events of the clinical history of the case are as follows. Seven years ago, when the patient was thirty-three years of age, he took part in a pugilistic encounter with a pugnacious friend at Drypool Feast (a local fair in Hull). After a long struggle he emerged from the dust and din of battle, victorious. Later in the evening, however, he was waylaid and attacked by some friends of the vanquished, and by them he was kicked, bruised and beaten, and lay half dead for some hours. He was quite unable to walk and had to make the best of his way home on all fours, taking frequent rests. It being now late at night, he met no one on the way to render him any assistance, with the exception of a policeman, who threatened to have him locked up. He arrived home at four o'clock in the morning, and for several weeks was confined to bed. He suffered much from pain in the right side, but discovered nothing unusual about his urine or motions. He had no medical attendance. After this he had good health till January, 1890, when he had an attack of influenza. In May of last year there occurred a severe hæmorrhage from the bowels, when quite a pint was lost. A recurrence took place in June nearly as profuse. The same month he sustained a fracture of the leg, and in November he first noticed a swelling in the right loin. I saw him first in consultation with Mr. Hollingworth of this town, when we found a tumour the size of a cocoanut situated in the right loin. When in the horizontal position the middle of the swelling was in line with the umbilicus. It was firm and very movable, and it had lately become very tender on manipulation. There was no obstruction, and since June the hæmorrhage had not recurred. In appearance the patient was very thin, but he had well-developed muscles and in former times had been a very strong man. He had lived rather freely and taken a good deal of liquor, without being, in his own opinion, a drunkard. The action of the heart was at times very irregular, but at others no irregularity could be detected. The urine contained neither albumen nor sugar and had a specific gravity of 1028. He was admitted as an in-patient of the infirmary on Jan. 16th of this year and immediately put on milk diet with thirty grains daily of β-naphthol in the form of a pill. On a subsequent consultation, the diagnosis of malignant disease of the colon being given unanimously, I opened the abdomen on Jan. 24th by a vertical incision in Langenbuch's position to the outer side of the rectus. A large mass immediately presented itself, involving the middle of the ascending colon, the cæcum and appendix being unaffected. The omentum was adherent to the tumour anteriorly, and this I severed with scissors and ligature. Pushing the colon inwards, I now entered the scissors above the level of the tumour through the posterior layer of peritoneum lining the posterior wall of the abdomen to the outer side of the great bowel, and ran it down to a point opposite the lower end of the cæcum. The bowel could now be easily separated from its bed. It still remained to divide the peritoneum on the inner side where the colic vessels spread out fan-like to supply the colon. This was done by tying the serous membrane with the vessels in five or six successive pieces and dividing distally—i.e., between the ligatures and colon. The line of this incision inclined downward and inward, meeting the ileum as it crossed to join the colon five or six inches from the ileo-cæcal valve. Several diseased glands were included in this triangle. The ileum was separated from the mesentery in the same way, and now the greater part of the ascending colon, with the cæcum and four or five inches of the ileum, were free along with the tumour. The time had now arrived for dividing the bowel. Two long Makins' clamps were applied to the colon above the tumour, and between these the bowel was divided as nearly at right angles as possible. The mucous membrane of the upper divided end was stitched together by a fine continuous silk suture, and then, on invaginating the stitched end, the serous coat was united by a close series of Lembert's sutures. The ileum was also divided, and the edges turned in and sewed by Lembert's suture in the same way. The whole piece of bowel to be removed was now at liberty, and was lifted out of the abdomen with the tumour. There was left a gap in the intestinal canal extending from five inches above the lower end of the ileum to nearly the beginning of the transverse colon; and, the ileum ending in a cul-de-sac and the colon beginning in the same way, it was necessary to re-establish the continuity of the canal. I therefore opened the transverse colon anteriorly, the opening being rather more than an inch long and running in the long axis of the bowel. Into this one of Senn's bone-plates was introduced with the threads in position—i.e., two placed laterally and one at each end. The lateral threads were drawn through the intestinal wall and the end ones made to come out at the angles of the wound. The ileum was treated in the same way and a second bone-plate similarly introduced. One of the lateral threads of the plate in the colon was united to the corresponding lateral thread in the plate in the ileum and tied firmly, a couple of sutures being introduced on each side of it. The end sutures were next knotted, and finally also the other two lateral threads, the whole being rendered more secure by the introduction of a few stitches in the intervals. The parts were gently washed, the clots and sponges removed, the bowel replaced and the abdominal wound closed, a Keith's tube being kept in for a couple of days.

After the operation the patient lay collapsed for several hours. The sickness was at first severe and much pain was complained of. One-sixth of a grain of morphia was given the same evening and one-sixth the next morning. Next day he was better, and would have had very little pain had it not been for a troublesome cough. For two days he had nothing but hot water by the mouth. On the third day he had eight ounces of hot milk, and on the day after two pints.

A light-coloured liquid motion was passed on the third day, and regularly every day after. The pulse on the first day was 72; second, 80; third, 76; fourth, 100; fifth, 102; sixth, 100; seventh, 90; eighth, 102; ninth, 96; tenth, 90; and then it gradually fell. The temperature was 97° on the evening of the operation; on the second day 99·5°; third, 100°; fourth, 99 5°. On the three following days it was normal, and then the day after it mounted suddenly in the evening to 102°, falling next morning to 99°, after which it kept nearly normal till he left the hospital, which he did twenty-five days after the operation. The plates were never seen in the stools. The patient has gained greatly in weight, being 9 st. 7 lb. on admission; now, exactly one year and one month after operation, he weighs 13 st. 9 lb. There is so far no perceptible recurrence.

Remarks.—Three details which Senn strongly recommends I neglected to do in this case, but as matters have turned out they were unnecessary. One is, after the introduction of the plates and before tying the ligatures, to scratch the serous surfaces to be apposed; the second is to anchor the bowel in the vicinity of the junction to the parietal peritoneum; and the third to attach round the place of union an omental graft. One detail, however, which cannot be neglected without fatal extravasation of intestinal contents is to be especially particular to bring the serous surfaces accurately in apposition at the point where the mesentery joins the intestine and where the serous coat of the colon is deficient behind. This I was most careful to do. The last I heard of this patient was that he had run a race with a competitor, and, as in the fight, he was the victor.

Albion-street, Hull.

A CASE OF PLEURAL EFFUSION AT THE RATE OF THREE AND A HALF FLUID OUNCES AN HOUR.

BY W. HALE WHITE, M.D., F.R.C.P.,
PHYSICIAN TO AND LECTURER ON MATERIA MEDICA AT GUY'S HOSPITAL.

THE following case seems to me sufficiently remarkable to deserve record. The patient had ordinary tubal nephritis, together with mitral constriction and regurgitation. There was, as is usually the case, some fluid in each pleural cavity. On Dec. 11th twelve ounces of fluid were withdrawn from the left chest, and on Dec. 16th thirty-six ounces were withdrawn from the right chest. On Dec. 17th the extraordinary part of the case began. The patient was seized with excruciating pain in the right chest and much dyspnœa. Thirty hours after the first aspiration of the right chest 106 ounces of fluid were withdrawn from it. Especial care had been taken to remove all the fluid at the first aspiration, so that the whole of the 106 ounces must have collected in thirty hours. On Dec. 20th (seventy-eight hours after the second tapping of the right chest) 120 ounces of fluid were withdrawn from it. On this occasion also there were extreme pain and dyspnœa; in addition, there was great œdema of the neck, which I was inclined to attribute to pressure on the superior vena cava and the enormous quantity of fluid in the right chest, for it subsided quickly when the fluid was withdrawn. On Dec. 22nd (thirty hours after the third tapping of it) fifty ounces of fluid were withdrawn from the right chest, which was not tapped again till Feb. 12th, when thirty ounces of fluid were taken out.

It seems to me that the only possible explanation of this extraordinarily rapid accumulation of fluid is that the patient had thrombrosis of her large azygos vein before it is joined by that from the left side. It is not against this view that we saw no enlarged superficial veins, for the most important anastomoses between the branches of the azygos veins of the two sides and the large azygos vein and the inferior vena cava are deep-seated in the abdomen, the thorax, and around the spine. Nor is it conclusively against this supposition that no evidence of thrombosis was found post mortem, for the patient did not die till eight weeks afterwards, by which time all signs of thrombosis might very well have disappeared. She herself had the clinical symptoms of thrombosis of her femoral vein only ten days before her death, and yet the vein was at the necropsy found to be patent. I have often observed that when patients have died no evidence has been forthcoming of thrombosis, although all the signs of it have been present during life; and at a recent meeting of the Pathological Society, at which Dr. Pitt read a paper on Pulmonary Embolism, Dr. Goodhart and others expressed the opinion that all the evidence of venous thrombosis might so completely disappear that no sign of it can be found post mortem. It seems to me that no other explanation offers itself of this case, in which, supposing the fluid collected at a uniform rate, after the first tapping of the right chest that rate was three ounces and a half an hour, after the second one ounce and a half an hour, and after the third about one ounce and a half an hour. It is also quite exceptional for the distension of the chest with fluid to be so rapid as to cause acute pain, and it is no doubt comparable to the severe pain in the calf, felt in acute femoral thrombosis, and, like it, is probably due to the rapid stretching of the parts by the fluid; also it must be very rare for the pressure of the fluid on the superior vena cava to cause œdema of the neck.

The following are the details of the case:—A young woman aged twenty-two was admitted into Guy's Hospital on Dec. 1st, 1892. She had had scarlet fever when young. She was a waitress at a restaurant, and when going home from her work caught cold. The next day her feet were swollen, and the day after her face and eyelids, and five days later, feeling ill, she took to her bed. The œdema increased, and she suffered from pain in the head and in the loins, from vomiting and from dimness of vision. On admission she was suffering from general œdema. There was some ascites. The cardiac apex was in the normal position. The chest was dull behind from the eleventh rib for four inches upwards, and over this area there were all the other signs of fluid. The edges of both optic discs were blurred. She was passing about twenty fluid ounces of urine, 150 grains of albumen, and 100 grains of urea a day. Milk diet and diuretics were ordered.

Dec. 7th.—She was better; the œdema of the body generally was less, but the chest was very dull up to angles of the scapulæ.—10th: She was ordered injections of pilocarpin and a vapour bath at night, compound jalap powder when necessary and middle diet.—11th: Twelve ounces of colourless fluid were withdrawn from the left chest.—12th: A systolic murmur was heard to-day at the apex for the first time.—16th: Thirty-six ounces of colourless fluid were obtained from the right chest. The patient was not so well. The systolic murmur was heard in the axilla, and there was a presystolic murmur also. Particular care was taken to aspirate all the fluid.—17th: This evening the patient was suddenly seized with excruciating pain in the right chest, together with severe dyspnœa. The right chest was found to be extremely dull, and it was at once aspirated, thirty hours after the last aspiration of it, and 106 ounces of fluid were withdrawn. The fluid must, if it collected at an even rate, have formed at the rate of three ounces and a half an hour. The patient was much relieved by the aspiration.—18th: The patient was better; this evening the air was entering the right lung very well.—19th: The air did not enter the right lung at all well, but there was no dyspnœa, although the dulness extended up to the fourth rib.—20th: At 2.30 A.M. the patient rather suddenly became very dyspnœic, and 120 ounces of fluid were withdrawn from the right chest. Previously to this œdema about the neck had rapidly appeared and was very marked, as though the superior vena cava was pressed upon, but it subsided after the fluid was removed.—22nd: Gradually the signs of fluid have returned in the right chest, and this afternoon at 4 P.M., thirty hours after the last tapping, fifty ounces of fluid were withdrawn. The left chest has always remained free, or almost free, from fluid since it was tapped.—27th: The fluid was slowly collecting again in the right chest. It was noticeable that the withdrawal of large amounts of fluid from the chest have been associated with a considerable diminution of the general œdema. During January it was not necessary to withdraw any fluid from either side of the chest. The patient suffered from bronchitis, headache and diarrhœa at different times; she also developed well-marked albuminuric retinitis, and towards the end of the month pericarditis.—Feb. 7th: The legs have been very swollen lately, especially the left, in which there is such pain and tenderness over the femoral vein as to make one very suspicious of thrombosis in it.—12th: The dyspnœa has been getting worse the last few days, and to-day thirty ounces of fluid were withdrawn from the right chest.—14th: The patient was in all respects much worse; sixteen fluid ounces were withdrawn from the left chest.—17th: The patient died this evening.

Necropsy.—The kidneys were typical large white kidneys. The heart weighed thirteen ounces. There were three ounces of fluid in the pericardium. The mitral valve was

both incompetent and constricted. The pulmonary, azygos and left femoral veins all appeared to be normal. The right pleural cavity contained twelve ounces of fluid, the left eight ounces. There was extensive pleurisy over the left lung and some over the right. The bases of both lungs were compressed. There was some pus in both tonsils.

Harley-street, W.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL AND THERAPEUTICAL.

A CASE OF STRYCHNINE POISONING IN WHICH DEATH OCCURRED AFTER AN UNUSUALLY LONG PERIOD.

BY THOMAS J. HENRY, L.R.C.P. & S. EDIN., J.P.,
GOVERNMENT MEDICAL OFFICER, WARIALDA, NEW SOUTH WALES.

AT 9.35 A.M. on Jan. 27th I was called by the police to see a man aged forty-six. He was said "to have taken strychnine to do away with himself." As he lived close at hand I was with him in five minutes. I found him convulsed about the lower part of the body. He told me he had taken, three-quarters of an hour or so previously, "as much strychnine as would cover a shilling"—probably from seven to ten grains. He had poured it in a dry state on to his palm, tossed it into his mouth and washed it down with water. He had by threats compelled his wife to watch his actions, and then wait until symptoms manifested themselves—a period of from ten to fifteen minutes. He then sent her to a business man in town with a letter he had previously written, detailing his intentions. The woman said she was too frightened to give any alarm, although people lived within twenty yards. She delivered the letter and returned quickly. The recipient of the letter, thinking it might be a serious threat, took it to the police. The latter went to investigate the case and then called me. I adopted the chloral and bromide of potassium treatment, giving large doses of each. I supplemented these by chloroform inhalation occasionally. At first the jaws were free and I was able, by police assistance, to prevent the patient's attempts to bite and got the tube down. I washed the stomach out repeatedly. It was quite devoid of food. He was well aware of the strength and properties of strychnine as he was an experienced dingo poisoner and had over seven ounces of the alkaloid (coloured pink as used in New South Wales) in his possession. To cause more rapid absorption he had refrained from breakfasting and taken a glass of whisky instead. The convulsions were exactly as described in Taylor's and others' works. He complained of great thirst and desired to be placed on his side. About 11 A.M. the symptoms were well marked. I then chloroformed him and he sank into a deep slumber such as chloral would produce, and he remained quiescent and limp till 1 P.M. He then awoke, seemed better, regretted his rash act and even joked. In accordance with the accepted teachings, both of the schools and the text-books, that after three hours a strychnine patient is practically safe, and, considering the patient's condition, I gave a good prognosis. At 2 P.M. he still seemed improving, but twitchings and mild general convulsions occasionally occurred. I then gave more chloral and at 4 P.M. more bromide. At 3 P.M. I had caused him to be removed to the hospital of which I am medical officer. He was carried the distance, about 200 yards, on a police stretcher, and had no convulsions on the way. About 4 P.M., however, convulsions again became more frequent, and he was much exhausted. What I particularly noticed all through was the extremely sudden cessation of the paroxysms. From the climax to complete relaxation was an instantaneous fall. Each lasted from ten to thirty seconds. There was usually an interval of ten to fifteen minutes between each. At 5.45 P.M. he seemed improving under the treatment; but suddenly as I was speaking to him he said, "Here's another coming," and cried out in terror. A dreadful paroxysm bent him back, he became almost black, and when the sudden relaxation occurred I found he was dead—asphyxiated by the intensity of the seizure. His pulse continued beating for a few seconds after the respiration stopped.

What I desire to particularly draw attention to is the length of time he lived—eight and three-quarter hours—after the onset of symptoms, or nine clear hours after the dose. Taylor (11th edition, edited by Dr. Stevenson) gives six hours as the longest recorded period for a fatal issue, and other works state the same. I think it highly important that it should be known by general practitioners that exceptions may occur, in order that no relaxation of treatment may be permitted from a false sense of security.

Warialda, New South Wales.

SACRO-ILIAC DISEASE, WITH NOTES ON ITS TREATMENT.

BY PEYTON T. B. BEALE, F.R.C.S. ENG., L.R.C.P. LOND.,
SURGEON TO OUT-PATIENTS AT THE GREAT NORTHERN CENTRAL HOSPITAL; DEMONSTRATOR OF PHYSIOLOGY IN KING'S COLLEGE, LONDON.

SEVERAL points of interest in sacro-iliac disease have been recently brought forward in the discussions arising at various societies, and I should like to draw attention to a few facts which seem to show that the disease is often accompanied by tuberculous disease involving the anterior surface of the sacrum. Brief notes of a case which was recently under my care illustrate this point.

A man aged thirty, with a strong tuberculous history, was admitted into the Great Northern Central Hospital in the early part of 1892 suffering from well-marked sacro-iliac disease. The disease was of about twelve months' standing, and the patient had undergone the usual treatment—that of opening abscesses and scraping out sinuses—several times. There was complete ankylosis of the left hip, with considerable flexion, dating from the time when the patient was four years of age. When he came under my care there were five or six sinuses in the left gluteal region and over the left sacro-iliac synchondrosis, with the usual signs of tuberculous disease of this part. One sinus discharged thick cheesy pus and, when probed, seemed to lead to the great sacro-sciatic notch. This sinus was laid freely open until the finger could be passed through the notch. A sequestrum was then felt lying against the front of the sacrum; it could not be grasped or withdrawn even after several attempts with different instruments, nor could it be broken up, as it was quite loose and slipped at once out of reach; so a free incision was made over the situation of the great sacro-sciatic notch on the right (sound) side. The left forefinger was inserted and the wound enlarged until the finger passed easily through the notch. By this means the sequestrum was reached, pushed across the front of the sacrum, grasped and broken up by forceps, assisted by the right forefinger in the wound on the left side, and the fragments were removed. The other existing sinuses led down to the same region and were laid open, scraped and drained. The shape of the sequestrum showed it to consist of the greater part of the sacro-vertebral articulation and it would appear that the disease had originated in this situation and that the presence of the sequestrum at the front of the sacrum had caused the continuance of the symptoms. In support of this view I may state that Professor Rose had a similar case under his care in King's College Hospital some months ago, where he removed a sequestrum from the front of the sacrum, and other cases have been published where necrosis in this region was described in conjunction with sacro-iliac disease.

Mr. Makins has recently recorded three cases, in one of which there was ankylosis of the hip on the affected side. This and the presence of cervical caries seem to be fairly commonly associated with sacro-iliac disease and both are due to tuberculous affection. The man, whose case I have briefly described improved rapidly after the operation and was able to walk, but he is now suffering from general tuberculosis. I therefore venture to think that in cases of sacro-iliac disease it is of the utmost importance to examine the front of the sacrum through the sacro-sciatic notch, and there is much evidence in recorded cases to show that the disease does exist there, perhaps primarily.

Grosvenor-street, W.

INTUSSUSCEPTION OF THE BOWELS TREATED BY INFLATION.

BY C. E. SOULBY, M.D. BRUX., L.R.C.P. LOND., M.R.C.S.,
LATE HOUSE SURGEON TO THE MIDDLESEX HOSPITAL.

THE following brief notes refer to a case which I diagnosed as intussusception of the bowels. Of course there can never be any actual certainty of the correctness of such a diagnosis during life unless a laparotomy be performed or the apex of the intussuscepted gut passes out of the anus or can be felt in the rectum; yet, in the following instance, the symptoms seemed to be typical of this complaint.

A bright, intelligent boy of five years was taken ill on Jan. 29th, 1893. He complained of great pain in the body, and his parents had noticed a "lump" there at the seat of pain. During the 27th and 28th he had been troubled with looseness of the bowels, the motions at first consisting of fæces; later of fæces and blood; and on the evening of the 28th of blood only. On the 29th I found the boy suffering from great pain in the body, vomiting, a coated tongue, confined bowels, and in the right iliac region a sausage-shaped swelling about four inches long, very painful when handled. The temperature was normal. I ordered small quantities of beef-tea, milk and ice, and prescribed five-minim doses of tincture of opium. On the 30th the patient was no better, although there was an abatement of the pain, especially after the medicine. The bowels were not opened. I examined the rectum, but could feel no intussusception. I kept him on a light diet of beef-tea, continued the opium mixture, and in the evening gave a copious injection of warm water. This was of no use and returned in fifteen minutes mixed with dark blood.

Jan. 31st.—His condition is worse. The swelling in the abdomen is increasing in size in a direction upwards and to the left; the abdomen is greatly distended; he vomits more frequently; the tongue is becoming brown; he was delirious during the night; the bowels have not been opened; the pain in the abdomen is greatly controlled by the medicine.—Feb. 1st: The patient is no better; his condition is about the same as yesterday; the bowels have not acted; the abdomen is still greatly distended. In the evening he had another copious enema of warm water, and afterwards air was continuously pumped in with the Higginson's syringe which I used for the injection of the water. During this injection the boy, towards the close, shrieked from pain, and I believe at the time, from what I found on my first visit on the following day, the invaginated bowel was reduced.—2nd: He has had three actions of the bowels since the injection. The first motion consisted of the injection, with some fæcal matter and blood; the second of liquid fæcal matter and blood; the third of fluid fæcal matter only. His condition is entirely changed, the swelling of the body and great distension have disappeared; he has not been sick, and the early symptoms of collapse which were evident on Feb. 1st are passing away. After this he made an uninterrupted recovery, solid fæces passing in due time; the medicine and restricted diet were continued for some days; no anæsthetic was used for the inflations. The cause, I believe, is not far to seek, for his parents told me that he had for some days previously to the illness been practising "musical drill" with other boys, in which the body assumed many and varied attitudes.

Grimsby.

SOME FORMS OF ACQUIRED SPINAL CURVATURE SUCCESSFULLY TREATED BY A MODIFIED FORM OF SAYRE'S JACKET.

BY M. N. BYRN, B.A., L.R.C.P. IREL. &c.

HAVING had three cases of acquired curvature of the spine under treatment, which occurred in females, all dressmakers, and which had its location in the upper dorsal region, I wish to detail the following case as being the worst of the three.

A young woman aged twenty-one enjoyed good health till eighteen years of age. She left home in the country to live in a town for the purpose of following her occupation as a dressmaker. After a short time she found bending over her work tiresome and complained of a dull aching pain between the shoulders, which developed to such an extent that she had to give up her work and go home, where she remained for two years and a half suffering great pain, and, to use her own words, unable to lie down, sit or stand with any comfort. Her stature was reduced one inch and a half (from 5 ft. 4 in. to 5 ft. 2½ in.); she was flabby-looking, almost unable to walk, and complained of great weakness in the arms, no appetite, and undue prominence of the upper dorsal vertebræ, with redness and tenderness of the skin over them; her chest revealed nothing abnormal on auscultation. I prescribed cod-liver oil and syrup of the iodide of iron, and applied the jacket in the following manner: A tight-fitting ladies' woollen singlet was substituted for the Cardigan jacket. Outside this I placed a cardboard splint four inches wide, padded with cotton-wool, along the spine, and applied the plaster-of-Paris bandages in the ordinary way. I dispensed with the jury mast &c., the patient being merely standing in as upright a position as possible during the application. In a month she was able to walk with the aid of a stick, and in another three months she regained her full stature, was able to walk about without any inconvenience and entered farm service, where she still remains enjoying good health. The result in the other two cases was equally satisfactory.

Weaverthorpe, Yorks.

A Mirror OF HOSPITAL PRACTICE, BRITISH AND FOREIGN.

Nulla autem est alia pro certo noscendi via, nisi quamplurimas et morborum et dissectionum historias, tum aliorum tum proprias collectas habere, et inter se comparare.—MORGAGNI *De Sed. et Caus. Morb.*, lib. iv. Proœmium.

GREAT NORTHERN CENTRAL HOSPITAL.

GANGRENE OF ANTERIOR FLAP AFTER AMPUTATION SUBSEQUENT SKIN GRAFTING.

(Under the care of Mr. PEYTON T. B. BEALE.)

WE have recently had the advantages of Thiersch's method of skin grafting after the removal by excision of tuberculous lupus of the skin and subcutaneous tissue brought prominently before the profession at the Medical Society. We now publish notes of a case of a different nature, which will serve to remind our readers that it may be of use in other circumstances. A question which has frequently to be decided by the hospital surgeon when an injury has been so severe as to require amputation of a limb is whether the injury inflicted has lowered the vitality of the tissues near the wound from which he would like to take his flaps to such an extent that they will certainly slough, or not? It is an important question, especially when one of the lower extremities has been injured, for an inch more or less may make the operation successful or unsuccessful in saving life. If the surgeon knows that he may fall back on the use of a process of grafting which will obviate the disadvantages of a contracting cicatrix should a flap slough partially or completely, he may feel emboldened to risk this sloughing, as it will take place under antiseptic treatment and suppuration with its attendant risks will be prevented. We are left somewhat in doubt, in reading the notes of the case, as to whether Mr. Beale would have amputated at the point which he selected finally had it not been for the dictation of the parents, but hold strongly the opinion that before undertaking any operation of emergency the surgeon should be left with a free hand to do what he knows is best for the patient and not accept responsibility with his hands tied.

A boy aged nine was admitted to the Great Northern Hospital on April 19th, 1892, suffering from a very severe crush, involving the left foot and leg as far as the tubercle of the tibia; also a compound fracture of the right fibula. The laceration of the tissues of the left leg was very great, both bones being fractured in six or eight places. The parents insisted upon the knee-joint being left intact, so an amputation was performed at the level of the tubercle of the tibia with the antero-external and postero-internal skin flaps, which showed at the time no signs of bruising. Fourteen hours after operation traumatic delirium set in, and the boy's temperature rose to 104°. This condition continued, with intermissions, for thirty hours. At the first dressing, forty-six

hours after operation, the anterior flap showed signs of gangrene, but there was no trace of tension. The whole flap (about three inches long) eventually became gangrenous, and was completely separated on the nineteenth day after operation, the whole process taking place quite aseptically. The raw surface which was left was skin grafted by Thiersch's method on May 25th, all the granulations being shaved off before the grafts were applied. The stump healed rapidly, and by July 8th was quite sound. The boy was seen in January, 1893, and the stump was quite satisfactory in every way. The length of time elapsing between amputation and skin grafting is accounted for by an attack of scarlet fever which commenced on the sixteenth day after admission.

Remarks by Mr. BEALE.—This case exhibits the following interesting points: (1) Violent traumatic delirium, caused by the large extent of skin lacerated and the great amount of comminution of bone and injury to nerves; (2) the exceedingly high temperature accompanying the delirium and lasting for thirty hours, these two factors bringing about the gangrene of the anterior flap; (3) the sloughing of the flap began and continued quite aseptically; (4) the value of skin grafting by Thiersch's method as applied to a stump. Had this not been resorted to, a second amputation through, or above, the knee-joint would have been necessary. I would lay great stress upon the complete removal of all granulation tissue by the knife or razor before applying the grafts, as by this means only can the subsequent, and otherwise inevitable, contraction be obviated.

LINCOLN COUNTY HOSPITAL.

TWO CASES OF TUMOUR OF THE BRAIN.

(Under the care of Dr. E. MANSEL SYMPSON.)

THESE cases will prove of interest to many of our readers, although the symptoms and their mode of development are not fully given. In the first case a primary carcinomatous growth was found in the brain, and there does not appear to have been any secondary tumour in other parts of the body. It cannot have existed for the whole period of the illness. Dr. Seguin, in writing of cerebral tumours, published a collected list of 580 in which the nature of the disease was proved; only twenty-four of these were carcinomatous, therefore these are rare as compared with tuberculous tumours, which numbered as many as 137.

CASE 1.—A female aged sixty-six. For four years she had been suffering from increasing paresis of both legs, attended with great increase in the tendon reflexes. She had for about the same length of time been absolutely deaf in the right ear. She was partially deaf on the left side also. She had double optic neuritis, going on to optic atrophy. She suffered severely from headaches, nausea and actual vomiting, and she was often attacked with dizziness. She eventually sank into a comatose condition for some days before death. On post-mortem examination there was found to be a large tumour occupying the surface of the upper and posterior portion of the temporo-sphenoidal convolutions, from the fissure of Sylvius to the sulcus between the second and third convolutions. It was of carcinomatous nature and apparently sprang from the dura mater of the temporal bone.

CASE 2.—A young man aged eighteen was first admitted under the care of the late Mr. Sympson into the Lincoln County Hospital on Nov. 2nd, 1891, and died on June 21st, 1892. History: He was in the hospital for pleurisy eight months ago,[1] and had pain and swelling in the right hip for three months and pain in the right knee.

On admission there was fulness over the right hip-joint and great pain on attempted movement; the thigh was kept rigid and there was tenderness over the anterior part. He started at night. His leg and thigh were put up in an extension apparatus. The note on March 2nd is as follows: "Tubular breathing over the upper part of the front of the left lung and dulness at the left base behind; caries of the fifth right rib; abscesses over the front of the right femur, left elbow-joint and over the third right rib." On May 10th there were complete left facial palsy, diplopia on looking to the left, paralysis of the left external rectus and double optic neuritis; the urine contained one-fourth albumen. He suffered from frequent headaches. There was anæsthesia of the cornea and of the left side of the face; the condition of the palate was not tested. On June 19th he was unable to retain any food on the stomach whatever. He died on June 21st from exhaustion. At the post-mortem examination one feature of interest was a dried up empyema which had been detected, watched and heard to disappear during life. In the brain was a tumour about the size of a filbert, in the left side of the pons Varolii, pressing on the floor of the fourth ventricle, especially on the roots of the third, fourth, fifth, sixth and seventh nerves. On being cut into it was commencing to caseate in the centre.

Remarks.—The curiously exact limitation of the tumour and the results produced by its pressure seemed worth recording. It is not often that nature permits her cerebral experiments to be so definite. For the sake of compression no details have been given of the surgical treatment. For the notes I have to thank our late house surgeon, Mr. Harper, as well as our present one, Mr. D. G. Watkins, who performed the post-mortem examination in a most careful manner.

[1] This exemplifies the belief expressed by Dr. Barrs of Leeds as to the frequency with which phthisis follows an apparently simple pleurisy. I have seen several instances.

Medical Societies.

MEDICAL SOCIETY OF LONDON.

Symptoms of Mental Dissolution.—Constitutional Differences between Boys and Girls and their relation to Educational Requirements.

AN ordinary meeting of this Society was held on March 20th, the President, Dr. Bristowe, in the chair.

Dr. G. H. SAVAGE read a paper on the Symptoms of Mental Dissolution. He took as the basis of his paper chiefly his experience of seventeen years at Bethlem Hospital, taking out tables of all patients over sixty; these tables were only useful as general indicators of the way in which senile dissolution showed itself. Herbert Spencer had shown the uses of the study of mental dissolution as well as of mental evolution. Natural decay followed certain lines, but these differed in individuals. Premature decay occurred in certain diseases, such as general paralysis of the insane. It also followed certain toxic conditions, such as those due to alcohol. No single symptom was pathognomonic of dissolution, though loss of memory was the most common. In all stages of dissolution there was loss of mental power, which might be shown in different ways and in different degrees; there might be loss of power or loss of control. Dissolution was shown early by reduced power of acquisition, next by reduction of power of retention of recent impressions, next by defect of coördination; later by loss of control and of judgment. Dissolution was, on the whole, the reverse of evolution, but did not follow quite the same lines. He began by an outline study of dissolution as seen in general paralysis of the insane; next with disorders of control of a general kind such as hysteria, epilepsy, mania, melancholia and dementia. In fact, taking the groups of symptoms before the individual ones, he specially noted the danger of impulse in the maniacal and of suicide in the melancholic states. As to special or individual symptoms, sudden loss of memory of recent events, varying much in kind and degree, was most important; loss of emotional control was next in frequency and was even more important as leading to sexual faults. There was a tendency to collect objects of all kinds, which might depend on several causes. There was frequently a disregard of cleanliness which was hard to understand. Judgment might remain for a long time after the memory was weakened and the control defective.—The PRESIDENT related two cases which illustrated a point brought out in the paper. One was that of a well-known man, who, in the full zenith of his intellect, while stopping in a provincial town, had a standing invitation to luncheon at the house of a friend. One day he went in and lunched, and an hour later returned and asked for lunch again, being apparently unaware that he had already had a meal. In another case a gentleman, who had in the morning made all the arrangements for a conversazione and supper party in his house for the same evening, came home and went to bed, having forgotten all about it.—Dr. PASTEUR referred to cases of men who, between fifty and sixty years of age, suddenly developed epileptic convulsions

and even passed into a status epilepticus. They made apparently complete recoveries.—Dr. FRANCIS WARNER asked if mental dissolution in senility was more apt to occur in those of low-class mental development. He compared one of the varieties of mental dissolution mentioned by Dr. Savage to those cases of defective action of the muscles of the face in which the finer condition of muscle, not to be described anatomically, but known as expression, might be left unimpaired.—Dr. RICHARDS thought the inordinate appetite of senile dementia might be of local origin and be due to a blunting of the sentient ends of the nerves of the stomach. He did not think that mere absent-mindedness could be regarded as a sign of mental dissolution, for it was often present in young people who were otherwise healthy.—Dr. SAVAGE, in reply, regarded the instances related by the President as eccentricities or lapses rather than losses of memory. The cases with epileptiform convulsions were not usually of grave import and they usually occurred in brain-workers who had led irregular lives. The degradation of the "higher" mind was more readily perceptible than that of the lower mind. He could not admit the local explanation offered of the cases of inordinate appetite.

Dr. FRANCIS WARNER then read a paper on the Constitutional Differences between Boys and Girls and their Relation to Educational Requirements. The statements made were based upon observation of 50,000 children seen by him in schools, of whom 20 per cent. of the boys and 15 per cent. of the girls were noted as deviating in some respect from the normal. The cases recorded were arranged in four primary groups—as defective in development, in nerve condition, in nutrition, or dull at lessons. It was in the numerical frequency and combination of these states that he sought to indicate the groups of children and the constitutional differences of the sexes. In each primary group, except low nutrition, boys predominated. The relative power of resistance to adverse circumstances in boys and girls respectively might be sought in the combined conditions of the "development cases," which were the worst as to nerve and nutrition, with a large proportion of dulness, the boys showing more nerve signs and the girls being more thin and pale and dull. In the worst groups of children, including the imbeciles and those hardly educable, the boys predominated; so also amongst eye cases and for squint. Low nutrition was largely associated with defect in development throughout all groups of schools; this was more strongly marked with girls, increasing under any stress from the environment. Amongst normally made children there was an equal proportion of boys and girls who were pale and thin. Looking at boys and girls as seen in school by the teachers, amongst 100 dull children or 100 nervous ones there were more thin girls than boys. There was a large proportion of boys below the normal make, but amongst abnormal children girls suffered most; the boys appeared to have more spontaneous or uncontrolled growth and brain action, whilst the girls, who were below normal in constitution, were more readily affected by their environment. The "development cases" did not appear under as favourable conditions in institutions as in day schools; they grew fatter, especially the girls, who increased in dulness more than the boys, whilst the number with disorders of the nerve system was especially increased amongst boys. Comparing children in the upper and lower social classes, the general advantage was with the latter; the proportion with defect in development was equal for girls, but for boys in the upper class it rose; that for "defect in development cases" was for boys more free of nerve signs in the upper class, whilst as to the girls they were better off in this respect amongst the poorer class. Hard work seemed to suit the irregularly made boys better than the girls. Amongst the English, Irish and Jews, the latter ancient race was the most normal in all particulars, whilst the Irish showed the highest deviation from the normal, especially the boys. Dr. Warner thought that many of these deviations from normal make of body and action of brain were due to spontaneous growth and action not well controlled by past and present environment—non-evolutions or "dissolutions of acquired coördinated action" rather than degenerations; on the other hand, some defects—e.g., small heads, which were common amongst girls—appeared to be frequent in neighbourhoods with large buildings. Nerve disorder might largely be removed by good training, which was particularly necessary for the feebler-made children. Whilst school arrangements were framed for average children, it should be remembered that 20 per cent. of boys and 15 per cent. of girls were found to deviate from the normal, and that these children, especially the girls, might suffer from want of due attention to their condition; 17 per 1000 of boys and 15 per 1000 of girls appeared to require special methods of care and training. It was suggested that some knowledge of the scientific observation of children should be given to those in charge of schools and that educational methods might be improved by scientific study of children. The efforts of State medicine might well be directed to improving the conditions under which children lived, lessening the proportion with defects and aiding the evolution of a stronger race, well adapted to the conditions under which they had to live. National education appeared to confer great benefits, but great improvements appeared possible.—Dr. NORMAN KERR held that our present system of education was wrongly organised. The Jews were examples of the reward that followed strict obedience to the laws of health in body and mind. He looked upon malnutrition as a great cause of mental as well as bodily defect. As much muscular exercise as possible should be coördinated with mental training.—Dr. SAVAGE said that if criminal children could be caught young enough they could be prevented from becoming criminals. The deaf and dumb and blind were taught separately, and people defective in other ways deserved equal care.—Dr. ALTHAUS thought Jewish children more highly neurotic than Christians; and Charcot, who agreed with this, considered it might be due to their earlier persecutions.—Dr. SOLOMON SMITH asked Dr. Warner whether he had investigated the departures upwards from the normal as well as downwards. Had exceptional brilliancy in boys and girls any relation with abnormalities of development?—Dr. WARNER, in reply, said that the proportion of nervous cases was higher in the Jew than in the English boy. The great cause of weak and thin children was not want of food, but developmental causes which militated against the production of healthy frames.

PATHOLOGICAL SOCIETY OF LONDON.

Fibroma of Nose.—Anti-choleraic Inoculation.

AN ordinary meeting of this Society was held on March 21st, Sir Joseph Lister, Vice-President, in the chair.

Mr. G. STOKER showed a growth he had removed from the nose of a woman past middle age. There was a history of spitting blood in the morning for three years and phthisis had been diagnosed, though no signs of that malady could be found. In the right nostril a large papillated mass was found springing from the lower border of the inferior turbinated bone, extending back to the naso-pharynx. There was also a smaller mass growing from the middle turbinated bone. Attempts at removal with the cold snare caused nearly fatal hæmorrhage and so the galvano snare was used. The growth recurred and was removed in October and again in December, but since the latter date there had been no recurrence and the hæmorrhage had almost ceased. Mr. Shattock, who had examined the growth microscopically, found that it was a Soft Fibroma and the hæmorrhage had come from its deeper part.

Dr. E. KLEIN read a paper entitled "Anti-choleraic Vaccination": an Experimental Critique. The result of the injection of large doses of cholera bacilli (taken from the surface of solidified agar culture) into the peritoneal cavity of guinea-pigs produced acute intense peritonitis and death within twenty-four hours, which Haffkine and others considered to be proof of the specific action of the cholera bacillus. That this was unwarranted was shown by the facts—(*a*) that the peritoneal fluid as well as the blood of such animals contained the living bacilli; (*b*) that the abdominal viscera were greatly congested and covered with pseudo-membranes; (*c*) that the condition of the intestine was not characteristic of cholera. When guinea-pigs were injected intra-peritoneally with large doses of agar culture of—(1) vibrio of Finkler; (2) bacillus coli; (3) bacillus of typhoid fever; (4) proteus vulgaris, and (5) bacillus prodigiosus, exactly the same disease and the same pathological appearances (intense acute peritonitis) were produced as with the agar culture of the cholera bacilli. The subcutaneous injection into guinea-pigs of all these six species taken from agar cultures produced the same local soft œdematous tumour, gradually becoming smaller and firmer and occasionally leading to localised necrosis and ulceration of the skin. Agar cultures, sterilised at 62° to 65° C. for ten to fifteen minutes and then used for the intra-peritoneal or subcutaneous injection of guinea-pigs produced the same result in the case of all these six species, but larger doses

had to be used than of the living bacilli. Guinea-pigs which had survived the results of the intra-peritoneal injection of non-fatal doses of the six species were refractory against a second intra-peritoneal injection of otherwise fatal doses not only of the same but also of the other species. Thus guinea-pigs which had survived a first intra-peritoneal injection of the living or sterilised vibrio of Finkler, of the bacillus coli, or the bacillus prodigiosus, respectively, were found refractory against the peritoneal injection of otherwise fatal doses of the living cholera bacilli of ordinary cultures as well as of the "virus fort" of Haffkine. Similarly the repeated subcutaneous injection of the cultures of the sterilised or living vibrio of Finkler, of the bacillus coli, or bacillus prodigiosus, respectively, protected guinea-pigs against the intra-peritoneal injection of the living cholera bacillus, even of the "virus fort" of Haffkine. The conclusions drawn from these experiments were: 1. The experiments on the guinea-pigs made by Haffkine with the cholera bacillus were in no way of a specific character. 2. All the above six species contained in their cell substance the same poisonous material, as was proved by their producing the same illness, the same pathological appearances and acting mutually protectively. 3. This intra-cellular poison must be carefully distinguished from the toxines, albumoses and ptomaines formed by the different species in the nutritive media, including the animal body; whilst the intra-cellular poison might be the same in a variety of species (e.g., in the above six species), the specific toxines formed by them in nutritive media were different for the different species. 4. A protection produced by a first injection of the intra-cellular poison against a second injection of an otherwise fatal dose of the intra-cellular poison was not a protection against the specific toxines; as a matter of fact, guinea-pigs protected against the intra-cellular poison of the cholera bacilli succumbed after intra-peritoneal injection of the toxines produced by the cholera bacilli in gelatine cultures.—Dr. WOODHEAD said that some of the experiments related confirmed, whilst others went against, the statements that had been made by Haffkine and other workers. As regarded the results produced by these bacilli, there was one feature present in all the experiments which he had seen conducted—namely, a very large effusion of fluid into the small intestine; he thought that perhaps Dr. Klein's animals had escaped this because they had died too rapidly. In some cases the fluid in the intestine was mixed with food, whilst in others the fluid was clear, containing a few cells only. He had noticed that the bacilli had become altered in these experiments, becoming thicker and comparatively straight; but the same thing happened to those left in the culture-tube for a further twenty-four hours. He did not think that the evidence was yet sufficient to prove that the poison in all was identical; at any rate, the other results produced by these poisons were not identical. In connexion with this it should be remembered that inoculation of saprophytic anthrax would protect against ordinary anthrax, but that the pathogenic results of the two were not the same. The amount of the dose to produce a lethal result depended to a certain extent on the weight of the animal.—Dr. SIDNEY MARTIN insisted on the fact that many substances, some of them vegetable, would when inoculated produce a copious exudation of serous fluid into the gut; these poisons were excreted by the intestinal tract. In regard to the chemical part of the paper he much doubted if the intra-cellular poisons were all the same. In diphtheria there appeared to be at least two poisons. One was apparently the primary excretion of the bacillus—it was not a soluble chemical product and acted in extremely small doses; it might or might not be a ferment. The second poison was a soluble product formed from the tissues themselves by the action of the primary excretion. He thought that the comparison with tuberculin was not quite fair; that substance was remarkable from a pathological point of view in being the first body ever produced in a liquid form which would select local foci of disease for its specific action; it might turn out to be an intra-cellular by-product having no part in the production of tuberculosis. He was surprised at Dr. Klein's conclusion that one bacillus should protect against another, and would hesitate to call it "vaccination." It might be due to the production by one micro-organism in the blood of a substance which acted antagonistically to another organism, but this was not "vaccination."—Dr. HUNTER thought that the explanation of Dr. Klein's results lay probably in the direction Dr. Martin had suggested. It was not the production of immunity, but of a condition of extreme toleration, enabling the system to act for a certain time antagonistically to the poison of cholera, but this did not imply that complete immunity was produced.—Sir JOSEPH LISTER said that the announcement was a startling one, that bacteria of different kinds should be able to protect an animal against Haffkine's most potent poison when introduced into the peritoneum. If this were so it was an interesting pathological fact, and it would be an interesting practical one if it could be applied. He asked if, when the animal was inoculated with, say, bacillus coli, the protection still extended to it, even though Haffkine's virus was introduced into the intestinal canal.—Dr. KLEIN, in reply, said that he had not been able to demonstrate any relation between lateness of death and fluid in the intestine, though the sooner the animal died the less fluid there was in the peritoneum. He could not be sure that the poisons were identical, but the appearances produced appeared to him to be so. The different organisms might possess similar protoplasmic substances, which would act as poisons when introduced into an animal; but the later metabolism of these substances might be different. The terms he had used were meant not in a chemical but in a bacteriological sense. By "vaccination" he meant the production in an animal of a condition which enabled it to resist a dose of poison which a control animal could not resist. He had found that, under certain limits, the longer the test inoculation was delayed the more pronounced was the refractoriness of the animal. This showed that the toleration produced did not wear off quickly, and this, to a certain extent, weighed against Dr. Martin's hypothesis.

The following card specimens were shown:—

Mr. C. SLATER (for Dr. BEAVAN RAKE): The Organs of a Guinea-pig Inoculated from the Lungs of Lepers.

Dr. LEE DICKINSON: (1) Stenosis of the Left Bronchus caused by Dilatation of the Left Auricle; (2) Aortic Aneurysm bursting into the Left Bronchus; (3) Simple Gastric Ulcer unusually situated.

Dr. VOELCKER: Ulceration from Gall-bladder into Duodenum and Transverse Colon.

OBSTETRICAL SOCIETY OF LONDON.

Exhibition of Specimens.—Ligature of the Pedicle in Ovariotomy.

A MEETING of this Society was held on the 1st inst., Dr. Herman, President, in the chair.

The following specimens were shown:

Dr. MCCLEAN: Bones from a case of Extra-uterine Gestation.

Dr. SPENCER: Three Separate Placentæ from a case of Triplets.

Mr. ALBAN DORAN: Several specimens showing the condition of the Pedicle at different dates after Ovariotomy.

The incoming President (Dr. Herman) then delivered his inaugural address, after which

Mr. ALBAN DORAN communicated a paper on Ligature of the Pedicle in Ovariotomy. A case was described where the patient died of phthisis eight years after ovariotomy had been performed by the speaker. Experience had, he said, justified the opinion of some of the earlier ovariotomists that the ligature is the best method for securing the pedicle. China twist silk should be used, and it should not be too thick or too thin to make a good deep groove in the pedicle when tied firmly. The simplest loop and knot were the safest. The outer border should always be secured separately whenever the pedicle is broad or short and in long pedicles where the ovarian vessels are large. The early union of the tissues bulging over the ligature was well known. The absorption of the ligature had been authenticated by Drs. Ballance and Edmunds, who, in a case where the patient died eighteen months after ovariotomy, discovered the knot only of the ligature, the loop having been absorbed. The gradual destruction of the silk by leucocytes getting between the fibres had been plainly demonstrated in the case of arteries. The ovarian pedicle was still better placed to allow that process to go on undisturbed. Alleged disadvantages of the ligature were mostly due to its unskilful application and rough handling, or to the silk being too thick or complicated by knots. The pedicle of an ovary and tube removed for chronic inflammatory changes was less favourable for ligature than was the pedicle of a cystic or solid tumour of the ovary. An analysis was given of cases quoted in text-books and elsewhere to show the supposed disadvantages of the ligature. In some the pedicle was not that of an ovarian tumour, or the ligature

was not entirely sunk in the peritoneal cavity or was made of very thick silk. In conclusion, evidence and experience were in favour of the ligature for general use, as the best method for securing the pedicle when ovarian tumours were removed.

Dr. WILLIAM DUNCAN agreed with Mr. Doran that silk was by far the best and most reliable substance for ligature of the pedicle. At the same time he would like to point out that one of his colleagues at the Middlesex Hospital invariably uses kangaroo tendon, and with excellent results. He (Dr. Duncan) thought that inexperienced operators as a rule used silk much too thick and also employed an unnecessary amount of force in tying. His own plan was to transfix the pedicle with a double ligature of medium Chinese twist which had been boiled in a carbolic solution, and, having divided the ends, to cross them before tying. He had lately discontinued the practice of tying the pedicle twice round and found the results equally good; whilst there was, he thought, less likelihood of the ligature setting up subsequent irritation. It was very important that no traction whatever should be put upon the pedicle whilst it was being tied. He considered that by using sterilised silk and crossing the ligatures there was little to be feared from untoward results, even if a vein happened to be transfixed.

Dr. LEITH NAPIER alluded to the practice of covering over the raw surface of a large fleshy pedicle with the peritoneal edges and of securing any prominent gaping vessel with a separate fine ligature as affording additional safeguards from hæmorrhage, from absorption through the raw surface and also from post-operation adhesions to neighbouring parts.

Dr. WALTER EDMUNDS said that, though Mr. Doran classed complicated knots amongst the causes of disaster and commended a silk ligature with the simplest loop and knot, it must be remembered that these conditions were fulfilled in the earlier cases of hæmorrhage, and therefore the hæmorrhage was the cause of the knots and not the reverse. The reason that the ligature did not sufficiently compress the bleeding artery might be (1) that the loop was loose; (2) that the knot had become undone; or (3) that the pedicle had slipped out of the loop. The loop might be loose because the elasticity of the pedicle had distended the loop after the first hitch only had been tied when the ends of the ligature were relaxed (as they must be) to complete the knot. The difficulty could be met by using two ligatures side by side and tying and drawing tight the first hitch on each simultaneously, by which means the resistance to distension would be much increased, or one ligature could be held tight whilst the other was tied. The knot might come undone by the ends being cut too short or by the ligature breaking as the knot was completed. The boiling of silk in an antiseptic solution materially weakened it and made it advisable before using it to test it, not merely by pulling on it, but by tying a knot on it and then pulling. Lastly, the pedicle might slip out of the loop, which might be due to its having been cut too short or to the loop being too loose or to the ends of the knot having been pulled upon; to prevent that it was advisable to cut off the ends as soon as the knot was tied.

Dr. HEYWOOD SMITH said that after the first tie of a knot had been made it was very important not to put the least strain on the ends whilst the second tie was being made, as the slightest pull made the hitch likely to slip. He asked Mr. Doran if any observations had been made as to whether patients who had had the uterine appendages removed were more liable to phthisis and cancer. He had had a case a few years ago where the patient died within two years after such an operation, and in whom there were no apparent symptoms of phthisis previously.

Dr. HERBERT SPENCER agreed that silk was the best material for ligature of the pedicle. Hentsch had shown that chronic gut was undissolved after eighteen months, and he (Dr. Spencer) had found the silk ligature embedded in adhesions one, two and five years after ovariotomy. He thought floss silk greatly superior to Chinese twist, being cleaner, less liable to be damaged by manufacture and it could be tied tighter. In thick pedicles the first cross of the knot should be nipped with forceps whilst the second was being tied. He had never had a ligature come away afterwards.

Dr. BOXALL pointed out that it was necessary to take into consideration the friability of the tissues of the pedicle when selecting the material for ligature. A thin ligature cuts through friable tissues like a sharp knife.

Dr. LEWERS referred to the shortness of the pedicle as an occasional reason why a ligature could not be securely tied. In a case of this kind he had left a pair of Well's large pressure forceps on the pedicle for forty-eight hours with a satisfactory result.

Mr. DORAN, in reply, agreed with Dr. William Duncan in preferring silk ligatures to kangaroo tendon. A silk of moderate thickness made a good deep groove directly it was pulled tight; then the ends might be brought round once more. Boiling silk rendered it liable to snap. He found that sterilised silk was best preserved in carbolic acid mixed with oil of juniper and ready mounted on reels. Transfixion of a vein was a distinct danger. He had known fatal phlebitis with abscess in the pedicle after that accident. He agreed that large gaping vessels should be secured, but after ligature of the pedicle it was usually sufficient to fix a pressure forceps to the mouth of the vessel and leave it there till the closure of the abdominal wound. The application of the forceps, one at each end of the pedicle, and the sinking of the pedicle, the ends of the ligature being cut short at once after the tying of the knot, was the right practice. Dr. Edmunds was perfectly right in condemning the opposite practice of leaving the ends of the ligature uncut and pulling on them so as to raise and inspect the pedicle at the end of the operation. He (Mr. Doran) found a double reef satisfactory and agreed as to the dangers of a second transfixion where the two outer ligatures pulled on the third between them. He recommended the study of the article on "Knots" in the "Encyclopædia Britannica." One class of knots was made to resist traction from outside its loop, as in the case of a rope cable used in the mooring of an old 100-gun ship; but in securing the pedicle resistance to pressure from within was needed, hence the knot had to be tied on a different principle. He did not like the Staffordshire knot, as the loop had often to be drawn over a broken-down tumour and the silk might be contaminated by colloid material, malignant cells, pus, dermoid tissue or other impurity; besides he had known it to slip and it was too complicated. He was not aware that phthisis ever followed as a result of ovariotomy, but he had known a fragment of the wall of a perfectly simple ovarian cyst to undergo malignant degeneration. He had not found, like Dr. Boxall, that moderately thin ligatures cut through the pedicle of inflamed appendages. The clamping of the pedicle with large pressure forceps rendered the tissues thinner, yet tougher, and able to resist firm ligature. He was glad to hear of Dr. H. Spencer's experience with floss silk and hoped that his drawings of the microscopical appearances of old pedicles would be published. He (Mr. Doran) had had the misfortune to see two cases of slipping of the ligature with fatal results, and he believed the fault lay in the tying and neglecting to secure the ovarian vessels separately. He had never lost a patient from this accident, though he had known the ligature to slip before the end of the operation and to require readjustment. Fortunately he had secured the ovarian vessels, otherwise a serious amount of blood might have been lost.

WEST LONDON MEDICO-CHIRURGICAL SOCIETY.

Exhibition of Cases and Specimens.

THE meeting on March 3rd was devoted to the exhibition of clinical cases and specimens, the President, F. Swinford Edwards, F.R.C.S., in the chair.—The PRESIDENT showed (*a*) a case of extensive disease of the hard and soft palate in a man of middle age. The mucous membrane was affected on the right side, being much thickened and indurated. There was an enlarged gland beneath the angle of the jaw, and the case was regarded as probably malignant. (*b*) A case of successful wiring of the patella for fracture. The patient had made a good recovery and was rapidly regaining power of movement.—Dr. ABRAHAM showed a man, aged thirty, who displayed well-marked signs of Leprosy. He had resided in India till 1874, and it was not until 1884 that the first indications of the disease were observed. The skin of the face, hands and arms was thickened and nodular, and examination of an extirpated nodule showed the presence in swarms of the characteristic bacilli. During the eight years that he had suffered four children had been born to him.—The PRESIDENT drew attention to the debated question of a fish dietary as a cause.—Mr. POTTER asked whether there had been enlargement of the glands or blood extravasations.—Dr. MUNRO doubted whether an incubative period of forty years, as reported in some cases, was possible. He

considered it remarkable that the patient should have propagated since he had been suffering from the disease, the testicles, as a rule, being early affected and sterility resulting. He regarded the fish theory of causation as absolutely without foundation.—Dr. MORGAN DOCKRELL referred to the fact that sexual appetite was, as a rule, not wanting in lepers, though power of propagation was impaired.—In reply, Dr. ABRAHAM said that glandular enlargement and extravasations were absent in this case. He, too, thought that a fish diet had no causal connexion with the disease.—Mr. BIDWELL showed a lad, aged nineteen, in whom a compound comminuted fracture at the lower end of the humerus had been caused by the crank of a steam-engine. On his admission to the West London Hospital there was found a contused wound about three inches long on the outer side of the arm and a smaller one on the inner side; the skin and surface of the wounds were covered with engine grease and dirt, and some fragments of bone were lying loose in the wound. Three or four of these were removed and the ends of the bone united with silver wire. The edges of the wound were freely pared, and after irrigation with perchloride of mercury solution were brought together with silk suture, no drainage-tube being used. Cyanide dressings were employed and the limb enveloped in plaster-of-Paris. It was not dressed for a fortnight, and then both wounds were found to have healed by first intention. The splint was left off at the end of a month, and the movements of the arm are now perfect.—A patient under Mr. BIDWELL'S care, a man aged sixty, suffered from Epithelial Crypts of the Palm. On the left hand a probe could be passed a quarter of an inch into one crypt; here there was also some Dupuytren's contraction opposite the fourth finger. On the right hand the opening was much smaller; a little swelling could be felt and a fine probe passed in half an inch. Here there was no Dupuytren's contraction. They were painless, and patient did not know how long they had existed. Mr. Bidwell suggested as a possible cause that during his work of bricklaying some slight injury might have been done to the skin, epithelial cells being driven in and forming an epithelial tunnel. He compared them to implantation "dermoids."—Dr. BATTEN and the PRESIDENT considered the Dupuytren's contraction a more probable cause.—Mr. R. LAKE showed a case of Lupus of Larynx, Pharynx and Soft Palate. The epiglotis was almost destroyed and the right ventricular band was affected, though the vocal cords still remained free. The case was of two years' duration and had at one time improved under a saturated solution of lactic acid. The present local treatment consisted of aristol and salicylic acid.—Dr. CLIPPINGDALE showed a young girl who presented numerous small flattened Sessile Epithelial Nodules on the skin of the forehead, chin and forearms, which had existed since last September.—Dr. ABRAHAM regarded the growth as of a warty nature.—Mr. KEETLEY brought forward a case for diagnosis. The patient was a young girl, and presented a growth apparently beneath the fascia in the muscles of the forearm. It was oval in shape, about two inches and a half in length and rather less in breadth, soft and giving to the touch an obscure sense of fluctuation. Mr. Keetley said he had come to no definite conclusion as to its nature, but intended to cut down upon it with a view to its removal.

ROYAL ACADEMY OF MEDICINE IN IRELAND.

SECTION OF MEDICINE.

Some Points in the Treatment of Phthisis.—Clinical Experiences.

A MEETING of the Medical Section was held on Jan. 27th, Dr. H. Benson in the chair.

Dr. WALLACE BEATTY exhibited two patients, both being females, with Lupus Erythematosus.

Mr. DENHAM then read a paper entitled "Some Points in the Modern Treatment of Phthisis."—Dr. NIXON said that cases of phthisis amongst the poor might be divided into those which were curable and those which, although incurable, might be relieved as regarded the most distressing symptoms and have their lives prolonged. The cases coming under the first class were very few. There was not a sufficiently good combination of circumstances as regarded climate to give them a favourable chance of recovery whilst resident in Ireland. The second class of cases could be well treated in the wards of a general hospital.—Dr. J. W. MOORE differed from Dr. Nixon. He thought the climate of Ireland fulfilled all the desiderata for the treatment of phthisis which were asked for by Dr. Nixon, and, with the single exception of humidity, more so than any other place. He thought that patients belonging to Dr. Nixon's second class should not be admitted to a special hospital whose object was to give those who had a fair prospect of cure a chance. These patients could be received into the Royal Hospital for Incurables or into the Hospice for the Dying. In the proposed new hospital each patient would have a separate sleeping apartment.—Dr. NINIAN FALKINER thought that cases of phthisis should be removed from crowded tenement rooms; and if this were done the death-rate from phthisis would be lower.—Mr. DENHAM, in replying, said that when he commenced to investigate the subject of the new hospital he was strongly prejudiced against it, but that as he proceeded in the study of the subject he became a firm believer in it. He thought ordinary hospitals were defective for treating phthisis in the following points: First, the temperature was not constant; secondly, the cubic space allotted to each patient was insufficient; and, thirdly, the diet was unsuitable. He thought the patients suitable for admission to the new hospital would be those in whom the physical signs were not marked. He repeated the decision of the tenth Medical Congress held at Berlin, which was strongly in favour of treating pulmonary phthisis in special hospitals.

Dr. J. W. MOORE detailed notes of a series of five cases selected from those which had come under his observation during a recent period of clinical duty at the Meath Hospital, lasting from Oct. 1st to Dec. 31st, 1892. Whilst they were, no doubt, types of the every-day clinical experiences of a hospital physician, the cases threw more or less light upon obscure features in diagnosis and pathology, and illustrated some practical points in treatment. Hence their selection. They were as follow:—(1) Axillary abscess in an infant, simulating scarlet fever; (2) septic peritonitis from rupture of a small ovarian abscess; (3) retro-pharyngeal abscess in a man aged forty-five years; (4) a case illustrating the short incubation and invasion of scarlet fever; (5) thoracic aneurysm perforating the pericardium.

SECTION OF SURGERY

Splints.—Operative Treatment of Trifacial Neuralgia.

A meeting of the Surgical Section was held on Jan. 20th, Mr. Hamilton, President, in the chair.

Mr. HERCULES MACDONNELL read a paper on Splints, showing a modification of Liston's long splint and of the box splints for application to fractures of the leg, and claimed, from a long experience, advantages from those splints.—Mr. THOMSON said that he preferred the simpler and less expensive plaster splint to any elaborate appliance.—Mr. MACDONNELL admitted the efficiency of the plaster splint, but said that cases arose in which it could not be applied.

Mr. THORNLEY STOKER read a paper on the Operative Treatment of Trifacial Neuralgia, in which he briefly reviewed the recent work which has been done in this direction, and advocated operation on the fifth nerve in those extreme cases of epileptiform tic which had failed to yield to other treatment and were so severe as to destroy comfort or threaten life. He reviewed the various methods of neurotomy, stretching, avulsion, and neurectomy, and argued in favour of one or both of the latter as the best plan of operative treatment. He decried neurotomy as an uncertain and halting treatment, almost sure to be followed by a return of the neuralgia. He opposed stretching in the treatment of purely sensory nerves, as a mere temporary expedient. The paper dealt specially with cases in which he had removed the infra-orbital and gustatory nerves. The operation he advocated in removal of the infra-orbital nerve, and which he had performed with a perfect result, was the orbital method of Wagner, and he exhibited two instruments he had devised to facilitate its performance—one, a retractor, to lift the periosteum and contents of the orbit; the other, an instrument to free the nerve from its relations. In removal of the gustatory nerve he had employed the method of Paravacini, which he advocated as much less formidable than the retro- or transmaxillary operations and as giving sufficient access in most cases—the exceptions being those instances in which malignant disease had so much intruded on the mouth as to render the buccal operation impossible. He concluded: 1. That in cases of trifacial neuralgia demanding operative treatment neurotomy is not usually a satisfactory or efficient operation.

2. That in purely sensory nerves stretching is at best but a temporary expedient, and either should not be undertaken or, if having once been performed and followed by a return of pain, should not be repeated. 3. That the reasonable treatment in trifacial neuralgia of an extreme character is neurectomy, and that, whilst the operation on divisions of the fifth nerve external to the cranial cavity may be regarded as an established procedure, the ultimate operation of removing the Gasserian ganglion must still be regarded as on its trial. 4. That avulsion should only be practised as a part of an open operation, and that, as originally proposed by Professor Thiersch, it should only be undertaken when an open operation is for sufficient reasons impossible or inexpedient.—Mr. SWAN confessed that it appeared to him that until the seat of the lesion in the nerve could be accurately localised it was to some extent working in the dark to remove any part of it on the chance of curing a neuralgia.—Mr. BROOKS had a similar case under his own care. It was that of a man forty-eight years of age, whose superior maxillary division of the fifth was affected for over seven years. He had tried a good many remedies with only transient relief. He found the bony wall much thickened and denser than usually met with in the dead subject. This, he thought, bore upon the observation made by Mr. Swan as to the localisation of the seat of disease. Here the pain was localised in the terminal branches of the nerve about the incisor and canine teeth which are supplied by the anterior dental nerve. Consequently it was evident that the lesion of the nerve did not go back to the foramen rotundum. He believed that it was impossible to remove the entire Cæsarean ganglion without opening the cavernous sinus.—Mr. FRANKS did not think, in stretching a nerve, that it made much difference whether the nerve was sensory alone or sensory and motor combined. He had seen great benefit from stretching the sciatic nerve in the manner introduced by Billroth.—Mr. STOKER, in reply, admitted the importance of accurate diagnosis, but he did not think the situation of pain a definite indication of the portion of nerve engaged. He did not think there was any danger in removing the nerve behind the spheno-palatine ganglion.

SECTION OF OBSTETRICS.

Specimens.—Case of Spina Bifida successfully treated with Iodo-glycerine.—Abdominal sections.

A meeting of the Section of Obstetrics was held on February 3rd, Dr. Atthill in the chair.

Mr. GLYNN exhibited for Dr. W. J. Smyly a specimen of Sarcoma of Uterus. The patient, aged sixty, was admitted in January and curetted; the scrapings were examined by Dr. Earl and pronounced to be sarcoma. The patient left the hospital, and for domestic reasons was unable to return for a month. On examination a polypus was found projecting from the os, which was removed and sent to Dr. Earl, who reiterated his former opinion. The patient suffered very much from profuse hæmorrhage. On Feb. 3rd vaginal hysterectomy was successfully performed. Mr. Glynn also brought forward a case of Double Ovariotomy. In this case the right ovary was easily removed; but the left gave trouble, being strongly adherent to the descending colon. Recovery ensued.

Dr. ALFRED SMITH showed tubes and ovaries which he removed from a patient, aged thirty-four, who suffered from a bleeding Fibro-myoma of the Uterus. As a preliminary treatment he curetted away the fungous endometrium the week previously to the operation. The patient was doing well.—Mr. MCARDLE wished to know the relative mortality on the removal of fibroids as compared with that on the removal of the ovaries.—Dr. SMITH, in reply, said that in laparo-myotomy the mortality was 1 in 4, whilst in removal of the ovaries and tubes for myomas it was roughly 1 in 10 or 1 in 15.

Mr. MCCULLAGH then read a paper on a case of Spina Bifida successfully treated with Iodo-glycerine. The child—a male, now five years and two months old—was not brought under the notice of Mr. McCullagh until it was ten months old. There was then in the lumbo-sacral region an ovoid tumour four inches long, three broad, and elevated from two inches and a half to three inches over the surface, the long axis of the oval corresponding to the vertical line; it was sessile, translucent, marked with white bands, fibrous in character, coinciding with depressions on the surface of the tumour as if they constricted it. Mr. McCullagh, having determined to operate, selected the operation best known in connexion with the name of Dr. Morton—namely, after the withdrawal of some of the sub-arachnoid fluid, the injection of a solution of 10 gr. iodine with 30 gr. iodide of potassium in an ounce of glycerine for the purpose of exciting local inflammation. This operation, however, he modified; finding the withdrawal of the fluid was followed by a convulsion, he found that he obtained quite as much flaccidity in the tumour by laying the child on its face, with the hips raised. Next he found that where he had made the injections completely through the coverings of the tumour the effect was either *nil* or only slight circumscribed meningitis; whereas in those injections where the penetration was not perfect, as at the margins and the white fibrous bands already mentioned, small patches resembling the islands in skin-grafting were produced. He therefore confined himself altogether to dealing with the bands and the edges of the tumour, with the result that the whole tumour was soon covered. He then ceased the injections and painted the surface over with a double strength solution, with the result that the covering thickened and soon assumed the indurated condition which was present when the members saw the child exhibited. Mr. McCullagh's conclusions were: 1. That the subsequent meningitis developed in many cases treated by iodo-glycerine was due to the intra-saccular injections. 2. That neither they nor the preliminary evacuations of the contained fluid are necessary. 3. That Dr. Morton's method as modified is not only incomparably safer, but gives a result as good as could be hoped for from the most successful plastic operation.—Mr. MCARDLE referred to a case which he himself had exhibited of large spina bifida, which recovered spontaneously, but only after a long and painful illness. He said that the treatment which Mr. McCullagh had so successfully carried out was certainly devoid of any element of danger.

PROVINCIAL MEDICAL SOCIETIES.

BRADFORD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this Society was held on March 7th, Dr. J. H. Bell, President, in the chair.—Mr. HORROCKS read notes of a case of Ectopia Vesicæ, which he had studied by means of frozen sections. He described the anatomy of the malformation, which he regarded as due to failure of the closure of the urachus at the umbilicus.—Dr. GOYDER gave his experience with Salol, which, he said, is not absorbed from the stomach, but split into its two components in the intestine, salicylic acid being excreted in a combination in the urine. It was not so useful as an anti-rheumatic as it was as an intestinal and urinary disinfectant; he particularly used it in cases of pseudo-dysenteric nature and pyelitis.—Mr. ALTHORP read notes of the case of, and showed the Bladder, from a man aged seventy-seven, who suffered from enlarged prostate and calculus. Sixteen years ago he had had lateral lithotomy performed and a 164 gr. calculus removed. Later lithotrity was practised, and six months after that lateral lithotomy again and a 184 gr. calculus was removed. He had not been well after, and three months ago a calculus was removed by the supra-pubic method; prostatectomy was deemed inexpedient. He did well till the seventeenth day, when, without fever, delirium set in and lasted till death on the twenty-eighth day.—Dr. ADOLF BRONNER read a paper on Disease in the Naso-pharyngeal Cavity. He insisted on the permanent effects of even passing disease.—The following specimens were exhibited: Broad Ligament Ovarian Cyst, removal followed by melancholia; Dilated Tube from Chronic Salpingitis; Tuberculosis of Urinary Tract and Heart from case of Ulcerative Endocarditis; Preparations from Spinal Cord in Myelitis.

MANCHESTER MEDICAL SOCIETY.—At the meeting of this Society held on March 1st, Mr. F. W. Jordan, Vice-President, in the chair, Dr. MULES made some remarks on Acute Tonsillitis in its relation to Rheumatism, illustrated by references to the clinical history of a number of cases. As regards treatment, full doses of tincture of perchloride of iron every two hours, with wine to adults, and avoidance of exposure to any chill, proved most successful, and since adopting such measures Dr. Mules had never met with rheumatic sequelæ.—Mr. F. A. SOUTHAM drew attention to the operation of Supra-pubic Cystotomy and mentioned a number of cases to illustrate the different conditions in which the operation was indicated—viz.: (1) For the removal of tumours of the bladder; (2) in cases of calculi where lithotrity was contra-indicated by the large size of the stone, or its encysted position, or when associated with enlargement of the prostate; (3) in cases of prostatic retention where palliative

treatment failed to afford relief and self-catheterism was impracticable either as a means of draining the bladder or with a view to prostatectomy; (4) in obstinate cases of chronic cystitis, especially when tuberculous.—Mr. WALTER WHITEHEAD read a paper on Aseptic Details in Surgery.—At the meeting on March 13th, Mr. F. W. Jordan Presided, and Dr. WHITE related the case of a man who, whilst repairing a strap which was lying loosely round a revolving shaft, had his hand carried between the strap and the shaft, causing Dislocation of the Lower end of the Ulna forwards. The symptoms were:—extreme narrowness of the forearm, as though both bones had been pressed close together; the hand in a state of moderate supination; fixity of the wrist-joint; absence of usual prominence of the ulna and in its stead a great gap. The head of the ulna could be seen and felt lying upon the front of the lower extremity of the radius; the radius was in its normal relation with the carpus. Reduction was effected under chloroform by means of powerful extension and counter-extension and pressure of the displaced head in the direction of the sigmoid cavity. The forearm was kept in splints for about a fortnight; the bone has shown no tendency to re-displacement, and at the present time (two months after the accident) the limb is as useful as ever. This appears to be the thirteenth recorded case of this injury. Malgaigne collected records of nine cases, and Hamilton of three, one of which he saw himself.—Mr. WHITEHEAD gave an account of a Fibroid Tumour he had recently removed in the Royal Infirmary from the thigh of a youth twenty years of age. The tumour measured eight inches in length and three in diameter. It was detected five months previously to admission as a hard tumour in the popliteal space, extending upwards between and partly lost behind the hamstring muscles. In dissecting out the tumour it was found to be intimately adherent to the popliteal vessels and to follow them upwards to its full extent. Eight inches of the nerves were completely detached from their surroundings during the operation and were ultimately left in an isolated condition in the wound. The tumour apparently originated from the periosteum of the femur, but probably an intra-muscular septum might have been responsible for its origin and microscopically it was evidently an ordinary fibroma. The function of the popliteal nerve was not in the slightest degree affected by its disturbance and separation from its natural attachments.—Mr. WM. COATES and Mr. G. A. WRIGHT showed a Vermiform Appendix and Fæcal Concretion removed by operation from a man of twenty-eight who had suffered from seven attacks of recurrent appendicular peritonitis. The patient recovered.

MANCHESTER PATHOLOGICAL SOCIETY.—A meeting of this Society was held on March 8th, Dr. Judson S. Bury, President, in the chair.—The PRESIDENT related the history and showed specimens of the following case. A man aged forty-one received a blow on the top of the head a year before death. He was unconscious for half an hour, but continued at his work for three months. A few weeks after the blow his sight began to fail and he suffered from headache. Later his left arm and subsequently his left leg became weak. When seen about six weeks before death there was slight weakness of the left limbs, double optic neuritis, mental dulness, and constant right-sided headache. He became worse, and a week before death developed complete left hemiplegia and passed into a state of coma. At the necropsy a vascular sarcomatous tumour occupied the first right frontal convolution. The surrounding brain substance and the white matter beneath, particularly the fibres of the internal capsule, presented acute softening. No evidence of damage to the skull was discovered, but a small exostosis was situated just above the middle of the tumour and possibly determined its position if it be allowed that the tumour was started by the injury from the blow.—Dr. EMRYS JONES exhibited microscopical specimens of (*a*) Sarcoma of the Choroid, (*b*) Glioma of the Retina, (*c*) Lupus of the Conjunctiva.—Dr. ROBINSON and Dr. MENZIES showed and described preparations of Brain and Spinal Cord, prepared by Golgi's Method.—Dr. BROOKE showed preparations from a case of Tuberculosis of the Skin.

SHEFFIELD MEDICO-CHIRURGICAL SOCIETY.—A meeting of this Society was held on March 9th, the President, Mr. Simeon Snell, F.R.C.S. Edin., in the chair, at which Mr. PYE-SMITH showed two cases of Excision of the Wrist. In one, that of a girl with pulpy disease of the right carpus, without sinuses, of eighteen months' duration, all the carpal bones except the trapezium were removed, with parts of the metacarpals and of the radius and ulna, by a single dorsal incision. Passive movements were commenced on the third day and the wound soon healed. Now, three months after the operation, there was remarkably little deformity. The patient could write well and had a very useful hand. The other case was that of a boy with caries of the left carpus, sinuses and swelling of three years' standing, following a crush. It was similarly treated and was resulting in a useful hand, though the sinuses were not yet healed. Mr. Pye-Smith also showed a man with a large Hunterian Chancre on the Left Eyebrow. The patient had received an injury there in a scuffle a month before the appearance of the chancre. When first seen, a week later, the chancre was nearly an inch in diameter, there was a hard gland in front of the ears and a faint macular rash on the chest and abdomen.—Dr. BURGESS read the notes of a complicated case of Heart Disease. In addition to mitral stenosis and tricuspid regurgitation with large pulsating liver there was a diastolic murmur heard loudest in the second left interspace and conducted to the left, but not heard to the right of the mid-sternal line nor below the third interspace. The cyanosis, dyspnœa, hypertrophy of the right ventricle and tricuspid regurgitation were explained by the mitral stenosis and could not therefore be cited in support of pulmonary regurgitation. The pulse was not decisive, but the fact that the valvular lesions resulted from rheumatic endocarditis was strongly in favour of aortic regurgitation.—Dr. WILKINSON showed the kidneys and bladder, with a large stone nearly filling it, of a man who died from Suppression of Urine. He also showed several large Vesical Calculi which Mr. Thorpe had recently removed by operation.—Mr. DALE JAMES read a short paper with the view of assigning to diet its proper place in the treatment of Cutaneous Affections. The question of food was doubtless important in acute dermatitis; but chronic skin diseases such as psoriasis did not in his opinion require special dieting. The very variety of diet tables recommended proved that there was no ascertainable rule in the matter.—Dr. SINCLAIR WHITE read a paper on Hernia in Childhood and showed fifteen children who had been operated on at the Children's Hospital and elsewhere for radical cure. Thirteen of these were cured and two very much improved. Professor MacEwen's method of dealing with the sac was adopted in every case.—Dr. WHITE advised operation in all children not cured by the careful and continuous use of a truss for twelve months, or where, for any reason, a truss cannot be worn. The operation was based on sound principles, it was singularly free from risk to life and gave excellent results.

ULSTER MEDICAL SOCIETY.—The fifth meeting of the session was held on March 8th, at the Museum, College-square North, Belfast, the President, Dr. Whitaker, in the chair.—Dr. CALWELL showed a case of Pityriasis Rosea in a woman aged forty-six. The eruption began two months ago on the inner side of the right thigh, from which it spread all over the trunk, the face, the neck and the extremities, the parts below the knee and elbow remaining free. The eruption is now characterised by pinkish-red rings of varying sizes, gyrate lines, and patches very slightly raised and with slight and rather fine desquamation; the borders are well defined, and the centres of the circles have a faint fawn colour; there is some itching, more especially at night, and the eruption is fainter on the trunk than formally, but is still well marked on the thighs, and a few circles have lately appeared below the knee. It spread all over the body in about two weeks. Little or few constitutional symptoms were complained of, and no fungus was discovered under the microscope. It was evidently the variety pityriasis rosea circinata. He showed two cases of Lupus: one with a very tumid condition of the upper lip, the disease spreading to the gums and palate; the other a very superficial form on the neck. He recommended strongly, where there is no operation, the application of carbolic acid and continuous boracic poultices.—Dr. ST. CLAIR BOYD showed a large Multi-locular Cyst, which with great difficulty, owing to adhesions from five previous tappings, he had successfully removed from a patient. He also showed the appendages he had lately successfully removed from another patient for hæmorrhage and pain, rendering her life useless and burdensome.—Dr. W. H. THOMPSON read a paper on the Physiological Action of Atropine and Morphine on the Secretion of Urine. It was a description of some of his work in the Physiological Laboratory at Leipsic, embracing eleven experiments on dogs. He showed that both atropine and morphine diminished the quantity of urine and the quantity and the percentage of urea, but increased the quantity of nitrogen of other products.—Mr. CECIL SHAW read a paper entitled "Notes on some Common Defects of

Vision," referring to the pitfalls that beset the general practitioner, such as headache from astigmatism, iritis treated as neuralgia &c., and gave a *résumé* of the chief difficulties in this direction and the methods with which to guard against them.

Reviews and Notices of Books.

A Treatise on Public Health and its Application in different European Countries. By ALBERT PALMBERG, Doctor of Medicine and Surgery, Medical Officer of Health for the County of Helsingfors in Finland, Vice-President of the Hygienic Society of Finland &c. Translated from the French Edition, and the Section on England edited by ARTHUR NEWSHOLME, M.D. Lond., D.P.H., Medical Officer of Health for Brighton &c. With 182 Illustrations. London: Swan Sonnenschein and Co. New York: Macmillan and Co. 1893.

THIS is not only a very useful book, but it is unique in its way; a careful comparison is instituted between the sanitary organisation and practice of different continental countries and those of this country, and information is given on many points of practical detail from which the English hygienist may ascertain the various methods of procedure abroad and compare them with those adopted at home.

The author, in his preface to the English edition, says that the favourable reception of the work has far surpassed his expectations, and that—the original Swedish edition having been already succeeded by a French one—Spanish and English editions have now been asked for. For the purpose of securing a more accurate description of all the details of English sanitary legislation and administration, Dr. Palmberg has obtained the aid of Dr. Arthur Newsholme, who is actively engaged in sanitary work, to bring up to date and complete the chapter relating to England, especially that portion of it bearing on recent legislation; and we may say at once that this seems to have been thoroughly well done. As regards the general character of the book, it may be stated that its practical spirit is best indicated by the remarks in the author's preface. Public hygiene is perhaps more empirical than are other sciences. The putting in practice of theoretical views has often produced results different from those which were expected. Practice showed that the best way of avoiding the evil results from sewer air was not to hermetically close the sewers but to provide for their good and active ventilation, combined with frequent and abundant flushing. Again, theory speaks against the irrigation of fields by sewage, on the supposition that the pathogenic organisms contained in it, when exposed to the sun, would produce an extensive propagation of infectious diseases. Practice has shown the error of this view, and it is now experimentally proved that irrigation is the most effective method for the destruction on a large scale of pathogenic micro-organisms. The importance of practice is therefore, says the author, considerable in sanitary science, and this "Treatise on Public Health" is based upon his conviction of this truth and of the enormous value of a complete knowledge of sanitary arrangements proved by experience to be good. The description of the sanitary organisation of different countries is mainly based upon official information placed at Dr. Palmberg's disposal and appears to be exact and reliable. The sanitary laws, systems and appliances described or referred to include those of England and especially London, Scotland, Belgium, France, Germany, Austria, Sweden and Finland. The subjects of statistics and the importance of public hygiene as shown by the mortality from general causes and from typhoid fever in different countries, mortality in armies and in great cities and towns and cholera in its relation to sanitary organisation, and a good bibliography and index, complete the volume. We should also add that the work is well and even profusely illustrated.

The section on England is, as we have already said in effect, comprehensively and well executed. It is gratifying to notice that this country receives its full meed of recognition and praise, it being said that of all countries in the civilised world none has a sanitary code so complete and precise as England, and that no nation has appreciated so thoroughly as have the English the importance of fresh air. It is declared to be one of the causes which have made the rate of mortality lower in Great Britain than in most continental countries. The chapter on Paris affords a good deal of useful and interesting information. Experiments made in that city fully demonstrate, that if sewers are to be prevented from diffusing bad smells they must be kept free from deposits, carefully ventilated and cleansed. It has been proposed to close the openings in the streets and to employ ventilating shafts for the removal of sewer air. But the author is of opinion that such appliances only act on a small length of sewer, besides being complicated and difficult to manage. Ventilation is most effectually secured, he considers, by making numerous openings of sufficient size. If it is desired to place traps in the openings to the sewers from the pavement, the openings for ventilation must, he says, be placed in the road over the sewers. Speaking of the proposal in England to ventilate the sewers by means of shafts opening above at the gas-burners of the public lamps in the streets, it is remarked that this has not been found advisable, as, when the gas is not burning, the exit of foul gases at such a low level might produce a serious nuisance. A description of the sewage farms at Gennevilliers and D'Achères and their working is given, together with some observations on the action of land upon sewage and pathogenic organisms as deduced from practice and experiments. The land at present used by Paris for the irrigation of sewage covers too small a surface. We had marked quite a number of passages for quotation or reference, but to collate and pass in review even a small number of the facts and observations comprised in this volume would extend our notice to too great a length. We trust that we have said enough to show that, in our opinion, it is a most useful work, and especially valuable to the English hygienist who desires to ascertain and compare the various methods of sanitary procedure on the Continent with those in use in this country.

The Chemical Basis of the Animal Body: an Appendix to Foster's Text-book of Physiology. By A. SHERIDAN LEA, F.R.S., University Lecturer in Physiology in the University of Cambridge. London: Macmillan and Co. 1892. Pp. 290.

A WORK like the present was much needed. The last really good text-book of the physiological chemistry of the animal body was written by Professor Arthur Gamgee, and was published in 1880. Twelve years have therefore elapsed since the appearance of that work, during which time much has been done, and it required a competent teacher to collect the facts that are distributed through many journals and to present them to the student in a readable form. The bibliography, which is copious, includes references to a very large number of the papers recently published in Hoppe-Seyler's Zeitschrift für Physiologische Chemie, Pflüger's Archiv, and the French and English journals of Anatomy and Physiology, and is consequently brought well up to date. It differs from Professor Gamgee's work in that it deals only with the chemical constituents of the body, and does not pretend to give the full description of the chemical composition of the various fluids and solids of the body—such, for example, as the blood, gastric juice and urine,—though their chief constituents are separately discussed. The plan pursued is that in the first instance the proteids are classified and their chemical characters given, the group being divided into seven classes: Native albumens, derived albumens, globulins,

fibrins, coagulated proteids, albumoses and peptones, and lardacein or amyloid substance. Next the enzymes are considered, including ptyalin, amylopsin, pepsin, trypsin, pialyn or steapsin, rennin, fibrin ferment, muscle enzyme and urea ferment; and then the nitrogenous non-crystalline bodies allied to proteids, such as mucin, gelatin, chondrin, elastin, keratin, neurokeratin, chitin and nuclein. Then follow the carbohydrates, the fatty acids and the fats with their allies. The amides and amido-acids come next, with urea and the uric acid group and the aromatic series. A short section is devoted to the ptomaines, and the remaining pages are occupied with an account of the colouring matters of the blood, bile and urine. In many instances—as, for example, in glycin, sarkosin, taurin and kreatin, and in the alloxan and allantoin series—the graphic as well as the molecular formulæ are given, which is of advantage, since it enables the industrious student to comprehend the process of the derivation of these complex substances from the more simple compounds and to understand their chemical relations, providing only that he has been already well grounded in the chemical laboratory.

It is difficult to select any particular section, where all are good, to show the mode in which Mr. Lea treats his subject, but we may take the glycolic acid series as an example. "Lactic (hydroxy-propionic) acid ($C_3H_6O_3$): This, after carbonic acid, is to the physiologist the most important acid of the series. If lactic acid be regarded as derived from propionic acid (CH_3CH_2COOH), it may be noticed at once that two isomeric lactic acids must be capable of being formed from it. These acids will have the following formulæ respectively: $CH_3CH(OH)COOH$ and $CH_2(OH)CH_2COOH$. Of these the first is known as ethylidene-lactic acid, the second as hydracrylic acid. In addition to the above, a third acid—isomeric with ethylidene-lactic acid—is known, namely, sarcolactic or paralactic acid. Of these three acids only two occur in the body, hydracrylic acid being absent. A fourth acid, to which the name of ethylene-lactic acid has been given, has also been described as isomeric with hydracrylic acid. It is, however, probable that this acid is really acetyl-lactic acid, hydracrylic acid being the true ethylene-lactic acid."

The several forms of lactic acid are then described with their chief salts, and illustrations are given of their crystals. Mr. Lea by no means restricts himself to the substances actually found in the animal body, but gives interesting sections on various compounds that have a biological interest. As an example which will show well his method of dealing with such substances, his account of asparagin may be selected. The composition of asparagin he gives as $C_4H_8N_2O_3+H_2O$, or $COOH\ CH_2\ CH(NH_2)\ CONH_2$, amido-succinamic acid; and he goes on to observe that, although asparagin is not found as a constituent of the animal body, it is a substance of considerable interest to the physiologist, for not only is it closely related to aspartic acid, into which it may be converted by the action of boiling acids and alkalies, yielding at the same time ammonia, but it undoubtedly plays a most important part in the constructive proteid metabolism of plants. Further, it exists in not inconsiderable amount in many plant-tissues used as food by man, and is known, like so many of the members of the numerous class of amido-acids to which it belongs (leucin, glycin &c.), to give rise to urea when taken into the bodies of carnivora and to uric acid in those of birds. "In plants asparagin, like leucin, is found chiefly in those parts which afford a store of reserve material, such as bulbs, tubers &c., and the cotyledons of seeds. The amount is, however, largely increased during germination, and it is therefore frequently present in very large quantities in seedlings—as, for instance, in those of yellow lupins. The increase in the young growing plant is most probably due chiefly to a formation of asparagin out of the decomposition of reserve proteids, although some may be formed synthetically. The amount is greatest when the seeds are germinated in the dark, and the seedlings subsequently grown for some time in semi-obscurity and shielded from the access of carbonic anhydride. Under these conditions the formation of non-nitrogenous [? carbohydrate] material is simultaneously prevented; and, putting the two facts together, it appears probable that the disappearance of asparagin in seedlings grown under ordinary conditions is due to its consumption for the synthetic production of proteids." The chemical characters of asparagin are then given by the author, and he proceeds to say: "One point of interest with respect to asparagin remains to be briefly mentioned. Seeing that in plants the nitrogen requisite for the construction of proteids appears to be obtained largely from asparagin, is there any evidence that in animals also the nitrogen of this substance can take the place of that of proteids? The answer to this question may be stated as follows: When asparagin is administered to carnivora or birds, practically the whole of it is converted into urea or uric acid respectively; thus in carnivora at least there is no diminution of proteid metabolism, such as is observed under a gelatin diet when asparagin is added to the food. In herbivora, on the other hand, there appears to be somewhat distinct evidence that a part of the nitrogen in proteids may be replaced by that of asparagin." This is all extremely well put and is highly suggestive, and in a final paragraph Mr. Lea remarks that the question as to the importance of the nitrogen of asparagin as a possible replacer of that of proteids arose first in connexion with the dispute, referred to in a previous page, on the mode of formation of fats in the animal body. In certain experiments employed by Voit as a basis for his views a diet of potatoes was largely used. The amount of nitrogen in these was calculated from the total nitrogen they contained, on the assumption that there was no nitrogen present in them in any form other than that of proteids; but potatoes contain much asparagin, so that, making allowance for this, the total amount of proteid given in the experiments alluded to was much less than was supposed, and might not have sufficed to account for the fat stored up. "This difficulty," Mr. Lea observes, "would obviously be got over if it could be shown that the nitrogen of asparagin can play the part of the nitrogen of proteids."

The account of the colouring matters of the animal body is very complete. It includes those of the blood, hæmoglobin and its derivatives, with the combinations of that substance with carbon monoxide, nitric oxide and carbon dioxide, methæmoglobin, hæmocyanin, hæmochromogen, hæmatin, histohæmatin, hæmin, hæmatoporphyrin and hæmatoidin.

The perusal of the work leads to the conclusion that, though slowly, yet still surely, we are acquiring a more thorough knowledge of the organic compounds found in, or capable of being extracted from, the body. This is seen in such examples as the enzymes and their action on different substances, the peptones and their several forms, and the pigments of the blood, bile and urine, to which we have already referred. The work may be accepted as an authoritative exposition of the present state of our knowledge of the chief constituents of the body, and is a valuable appendix to Foster's Physiology.

LIBRARY TABLE.

Burdett's Hospital Annual and Year-book of Philanthropy for 1893. Edited by HENRY C. BURDETT. London: The Scientific Press.—No one who takes up this book and examines even cursorily its contents can fail to be impressed with its value, especially to those who are engaged more or less directly with hospital work in its various departments. A rapid glance at the index will show the wide extent of the information it conveys in respect of the institutions of a medical and philanthropic kind distributed throughout the three kingdoms. Its pages present an *embarras de richesse* almost provoking by its very voluminousness. And yet such

work as the present is nothing if it be not complete. In addition to the kind of information usually to be found in "Year-Books," we have here and there articles which may be almost described as essays. Moreover, there is a section devoted to information concerning hospitals and the staffs of hospitals in the colonies; another dealing with institutions of a similar kind in America, and yet another concerned with societies engaged in philanthropic work. Of course, in such a repertory of facts and figures as the one under review errors will occasionally creep in, but, so far as we have been able to observe, inaccuracies are few and far between.

THE *Medical Register* for 1893 was published on the 20th inst. and can be obtained from the General Medical Council's publishers (Messrs. Spottiswoode and Co., Gracechurch-street, E.C.). From the statistics supplied amongst the preliminary matter there will be seen the continued growth of the medical profession. During 1892 no fewer than 1513 newly qualified practitioners registered their names, against 1345 in the preceding year, and the total number of practitioners in the United Kingdom, which at the beginning of the year 1876 was 22,200, has now risen to 30,590. This increase in numbers has been attained notwithstanding an average annual death-rate of 569, or an average annual removal from the Register, from all causes, of 834 names. Of the 30,590 practitioners whose names now appear in the Register, 18,622, or 60·88 per cent., were registered in England; 7320, or 23·93 per cent., were registered in Scotland; and 4648, or 15·19 per cent., in Ireland. The new Colonial Register, instituted by the Medical Act 1886, now contains fourteen names, representing the Universities of Melbourne, Sydney, New Zealand and Bombay, the last of which was recognised by the Council last year in consequence of the extension of the Act to India by Order in Council. The correctness of the Medical Register, so far as it is possible to ascertain it, has been ensured by the thorough revision to which it has again been subjected.

The *Dentists' Register* and the *Medical Students' Register* for 1893 have been some time published and are now on sale by the same publishers. Advantage has been taken of the issue by the Council of a resolution in regard to "covering" to send to all registered dentists an inquiry form to ensure the correctness of their addresses and qualifications, and, as a result of this inquiry, the information in the Dentists' Register is more than usually accurate. The total number of names now appearing in this Register is 4817, as against 4896 in the Register for 1892, being a decrease of 79, probably due to the thoroughness of the revision. Of the 4817 registered dentists an increasing proportion are Licentiates in Dental Surgery of the several Colleges, the percentage of such dentists being now 25·43, as against 24·07 last year, showing a marked increase from the 10·74 in the Register for 1881. On the other hand, the percentage of dentists whose names appear with no such qualification has further decreased from 75 in 1892 to 73·49 in 1893—a marked diminution from the 89·26 of 1881. The Medical Students' Register shows a decided decrease in the number of those who are entering the profession, 734 fewer students registering in 1892 than in 1891, the total number being 1671, which is lower than for any year since 1876. Complete information is furnished as to the various examinations of the preliminary examining bodies on which the students registered and the various medical schools at which they commenced their professional study.

MEDICAL MAGISTRATE.—Mr. Henry Monckton, M.D. Lond., F.R.C.S. Eng., has been placed on the Commission of the Peace for the borough of Maidstone by the Lord Chancellor of England.

New Invention.

NEW FORM OF BULLET EXTRACTOR.

FINDING that most existing bullet forceps are unsuitable and unsatisfactory for the extraction of the new compound bullet, Surgeon-Major Macnamara suggested to Messrs. Arnold and Sons a modified form of grip forceps which upon trial have been found to answer extremely well. The extracting forceps overcome many difficulties hitherto presented. The form of grip represented in the engraving grasps firmly and holds a bullet securely in whatever position it may be caught. The bullet cannot rotate or slip when the forceps are closed upon it. Another important feature is that the end of the improved forceps is perfectly smooth and forms a probe; in fact, the instrument is a bullet probe and extractor combined. It further possesses the advantage that it is not liable to tear or injure the tissues. This particular grip will, it is believed, extract not only the new bullet, but will be found useful in the removal of bullets of any shape. Foreign substances also, of whatever nature, can be grasped and removed by its intervention.

VOYAGES FOR HEALTH'S SAKE.

To the Editors of THE LANCET.

SIRS,—I wish from this side of the world to enter a protest against the indiscriminate shipping to these colonies of invalids, more especially those who are suffering from phthisis. Each year, about October, certain sailing ships which have the name of being "invalid ships" leave England for Australia, arriving here in our very hottest months—January or February—when the temperature in the shade is often 104° or 105° F. The trip generally takes from ninety to 100 days; out of these about half are in warm climates. If practitioners at home would consider that their patients would be shut up in stuffy cabins and saloons, with ports sometimes closed for days together, surrounded by fellow-passengers in all stages of phthisis in an atmosphere which must necessarily reek with the bacilli of tubercle, and give heed to other circumstances, I am sure they would think twice before recommending such a trip. Each year patients come out who have left home with only slight mischief, but who on arriving here are in the last stages of phthisis, having slept probably in the same cabin with a patient who may have been far advanced with phthisis on leaving home, and they have to die out here, away from friends and home comforts. Only a few days ago I saw a young fellow who had left home with slight physical signs at one apex, who, on arriving here, was simply dying of general tuberculosis. On recommending him to return by the fastest mail boat the following day he went back to his hotel and committed suicide by shooting himself, being so depressed at the idea of another voyage. The best voyage to take for health's sake, I should say, would be by a steamer coming round the Cape of Good Hope, with plenty of cabin space, good food and a thoroughly qualified medical officer on board.—I am, Sirs, yours truly,

R. HUMPHREY MARTEN, M.B. Cantab., M.R.C.S.

Adelaide, South Australia, February 12th, 1893.

THE LANCET.

LONDON: SATURDAY, MARCH 25, 1893.

IT is natural that the annual meeting of the Fellows of the Royal College of Physicians of London, held on the day after Palm Sunday, should excite an interest in the profession far beyond the limited circle immediately concerned in the proceedings. For on this day the Fellows assemble to receive from their President his account of the duties that have fallen to him during his year of office, together with his sketches of the lives of those Fellows who have ended their earthly career since the last anniversary; then the Comitia proceed to elect a new President, and it is upon their choice that much may depend in regard not only to the position of the College, but also to the general status of the profession in this country. In some respects the College occupies a unique position and exerts an influence for good far beyond any claims which may be made on its standing as an historical institution. For, notwithstanding the criticism of those who think its government should not be limited to the Fellows who form the minority of the body corporate; in spite, too, of the ungenerous taunts of others who would fain deprive it of its long-established rights, there is no gainsaying the fact that this College has exerted and does continually exert a most wholesome influence on the profession of medicine in this country. The bestowal of its Fellowship means something more than recognition of professional ability or of success in practice, and it is not surprising that its possession is valued and sought after, for it is known that every care is taken to make the selection impartial and just. In spite of all that may be said of the action taken by the College in questions of ethics, which from time to time are brought under notice—questions admitting often of great differences of opinion—it must, nevertheless, be freely recognised that its judgments have been such as reflect the best traditions of an institution which, in these difficult and delicate matters, has to act the part of the conscience of the medical body corporate. The College has always been a jealous guardian of professional honour. It has, especially of late years, taken also a most prominent—nay, a leading part in medical education. It is regarded also by the State as the chief representative body of our profession, and has often been appealed to on questions pertaining to the public service.

The position of President of such an institution must therefore be one of great responsibility as well as of high honour. He has behind him a long roll of names of physicians chosen for this office, on various grounds, it may be, but mainly by reason of their personal worth and the feeling that they are capable of setting the standard of right in professional conduct for their brethren to attain unto. To the general public he is the embodiment of the ideal physician, to the profession he is the arbiter of questions of disputed ethics, whilst to his own College he has to devote himself with an assiduity which can only be shown at much self-sacrifice. The office of President of the College of Physicians nowadays is no sinecure. The multifarious matters which come under its purview must demand of him a large amount of practical acumen and a sound judgment if the College is to maintain the position it has so long held. This being so, it is obviously to the advantage of the College, and therefore of the profession at large, to retain in office the same physician who has held the chair for several years—one who is well acquainted with its duties, and has taken a leading part in all the developments of its work. But the College could only do this if the President himself were wishful to retain a position fraught with so much personal inconvenience. We believe that we are only expressing a general feeling when we state that the continuance of Sir ANDREW CLARK in office for at least another year will be very welcome to the profession at large. He completes on Monday a term of office which has only been exceeded by his much-respected immediate predecessor since the time of Sir H. HALFORD'S lengthy reign. As a general rule, it may not be desirable to re-elect a President for a longer term than five years. It is hardly fair to him to demand so great a tax upon his endurance; moreover, repeated re-elections afford less opportunity for a trial of administrative talent which may be latent in the Comitia of the College. It seems to us, however, that the Fellows would act wisely and consult the best interests of the College and of medical education by once more calling Sir ANDREW CLARK to office. That he has claims to such a recognition of his untiring exertions, his ripe judgment and his frank generosity must be admitted, and unless he himself would desire retirement from so arduous a post there ought to be no hesitation in re-electing him, particularly as the still burning question of a University for London, in which he has shown so keen an interest, is still unsettled.

Believing that this will be the decision taken on Monday, it is hardly worth while to discuss other eventualities. Many an honoured name occurs to us which we would fain see enrolled on the presidential list, but which, for reasons concerned mainly with the all-engrossing duties of the office, it would be no kindness to propose. There is, however, one name which has often been prominently brought forward—that of a physician whose long activity in matters concerning education and medical legislation has marked him out as well entitled to the honourable position to which he has attained in the General Medical Council. It would, however, be singular if Sir RICHARD QUAIN should be called to fill both these positions at the same time; and certain recent litigation emphasises the incongruity of one individual presiding over two bodies having functions of such a different scope. Indeed, as far as he himself is concerned, we understand that in view of the important work in which the present President is personally engaged on behalf of the interests of the College as affected by the proposed teaching University in London, Sir RICHARD QUAIN does not wish to stand in the way of Sir ANDREW CLARK'S re-election on the present occasion.

THURSDAY, March 16th, is a day to be remembered in the annals both of the Royal Society and of the profession of medicine. We have already observed on the seemliness of this society hearing from the author of cellular pathology

the latest exposition of the bearing of his researches on the great problems of life and organisation and of his being admitted into its membership. We are more concerned to-day to notice the significance of the general reception which Professor VIRCHOW has received in this country, and especially by the profession at large, as represented by the banquet on the evening of the 16th inst. The address to the Royal Society will remain an achievement of scientific exposition in the happiest English by a distinguished foreigner, and it is the less likely to be forgotten on account of its generous recognition of the work of English physicians and physiologists. HARVEY and GLISSON and HUNTER and BROWN, and the host of workers whom they represent, will live more vividly in the history of physiology and of medicine for the tribute, minute and justified, of the Croonian Lecturer of the Royal Society for the year 1893. Not the least interesting to medical practitioners, though perhaps a little less expected, was the part of Professor VIRCHOW'S tribute which alluded to the personality and the work of BROWN—to what he called "the new system of medicine founded in Scotland," of which in later years, under the auspices of Dr. TODD, we have had a resuscitation in England. The division of diseases into sthenic and asthenic, according to the apparent amount of vital force in them, has ever since BROWN'S time been a feature in the estimate of disease not by the people only, but by medical practitioners. No theory has had more to do in dominating practice—sometimes in wrong directions, at other times in right directions, but in very wrong degrees. But this, like many other parts of the Croonian Lecture, is matter for separate notice and is not the special object of our present article.

We are concerned now with the interest of the episode of Professor VIRCHOW'S visit as a whole and as an event in the history of the profession. The eloquence of the evening gathering was not unworthy of the occasion. It represented all that was best in the Royal Society, and all that was best in the medical profession, besides being an illustration of the close connexion of medicine with science in its deepest parts and with the great society which has always cultivated close relations with the faithful workers in medical science. The speech of Lord KELVIN at the dinner clearly showed his recognition of the advance made by Professor VIRCHOW and the students of the cell in physiology and pathology. There was a little touch of humour, indeed, in the way in which he indicated the fact that, in localising the secrets of life in the cell instead of in the egg, as HARVEY did, we are not much nearer the discovery of the nature of this essential and mysterious principle. This much, indeed, was practically admitted throughout by the Croonian Lecturer himself and by all the speakers at the banquet. The advocates of spontaneous generation were conspicuous by their silence if not by their absence; and for the time being, at any rate, in this gathering of the foremost men in the sciences—alike of physics and of biology—there was the frankest recognition of the continuity of life from life—of cell from cell—leaving to future ages the solution of the problem of the origin of first life and the discovery of the nature of all life. Mr. HUXLEY, whose title (as a member of the Privy Council) of "the Right Honourable" seemed to puzzle the toastmaster, is not only famous as an anatomist and biologist, but has claims to be regarded as a perfect type of the scientific speaker. His presence at what was essentially a gathering of the medical profession was a pleasing compliment not only to the host of the evening, but to the profession of which, like most anatomists and biologists, he is an honoured member. His speech was in admirable taste and gave his audience, as did also the speech of Sir JAMES PAGET, a wonderful idea of the range of Professor VIRCHOW'S work. Not the least advantage that should accrue from the visit of our distinguished guest is the indirect proof which his account of English work in physiology and medicine affords of the value of the study of life as distinguished from that of death, of the study of living animals as distinguished from mere morbid anatomy. The turning point of medical science—at which it made a start on the road which is now conducting it to the greatest discoveries—was when HARVEY began to set the example of studying organs in action as well as dead parts. "Here for the first time," says Professor VIRCHOW, "the anatomical examination of living parts was carried through in an exemplary way, according to experimental methods." This is the high praise to an Englishman which a foreigner has to offer in a country where he finds such workers hindered by a suspicious and ungenerous law. We believe that the nation, which really regards its medical profession with respect, will see that if the glory of yet greater discoveries is to be achieved by Great Britain the restrictive legislation to which we refer will have to be relaxed. Finally, we must again express our sense of the pleasure which the visit of our eminent German colleague and the ovation he has received alike in London and at our principal seats of learning has afforded us. Such international hospitalities should be multiplied. They do immense good to the profession at home and stimulate it to further efforts, they bring before the public mind the true greatness of medical science and they enhance the friendliness of nations and of their true leaders.

FEW symptoms may arise from a greater variety of causes than uterine hæmorrhage, and whilst sometimes it may be of comparatively small importance, at others it may have the gravest significance. It should therefore never be disregarded or treated lightly till the reason for it has been satisfactorily ascertained, or, at all events, till every effort has been made to determine its cause. It may be said that these are merely general principles such as are acted upon by every earnest practitioner in every department of medicine—that, in fact, this is merely another way of saying that diagnosis should precede treatment; and this is true up to a certain point. For instance, to take as an example a common symptom, such as diarrhœa, it is obvious that all practitioners having excluded the more serious diseases likely to cause the condition, must at times be content to prescribe for it without always being able to say positively to what it may be due. We have not taken this symptom by any means at random. Indeed, within our knowledge a case occurred even in hospital practice in which a patient was treated for simple diarrhœa for twelve months by various astringent mixtures without benefit. At last, when a local examination was made, a large gall-stone was found partially embedded in the recto-vaginal septum. In this instance the fact

that treatment had preceded diagnosis had not done the patient any great harm; but there are special circumstances, unfortunately, in the case of metrorrhagia which not infrequently lead to the most lamentable consequences to the patient unless accurate diagnosis be made the first consideration. For instance, there is the knowledge on the part of the medical attendant that many patients are exceedingly unwilling to submit to examination, and therefore a natural disinclination on his part to urge upon them a course that would certainly be unpleasant, and might afterwards prove to have been unnecessary. Then, again, there may sometimes be a doubt in the practitioner's mind whether, after obtaining the patient's consent, the result of the examination would be as conclusive as could be wished. For these reasons the practitioner may be inclined to think there can be no harm in waiting for a little time, and trying the effect of the various medicines reputed to be useful in the treatment of metrorrhagia before determining upon a thorough investigation of the case. Yet it is scarcely possible to insist too strongly on the fact that a certain proportion of women who suffer from losses of blood, or a blood-stained discharge between the menstrual periods are suffering from cancer of the uterus, and the responsibility rests with those in attendance to make sure, as far as possible, that a case with this symptom is not a case of cancer before proceeding to treat it by simple remedies such as ergot or hamamelis. If this be borne in mind a larger proportion of cases than at present would be seen in time for operative treatment to have a fair chance of success. There are some popular fallacies, as our readers are well aware, prevailing amongst women themselves with regard to this subject. For instance, there is the notion that pain is invariably associated with cancer, and that consequently so long as there is no pain they may safely assume that their ailment, whatever it may be, is not, at all events, cancer. Similarly, even a larger class of patients erroneously fancy they must be the victims of cancer because they suffer pain. The fact of course is that, as regards cancer of the cervix, pain does not generally occur till a late period in the case, when the disease has reached an advanced stage and satisfactory treatment by operation has become impossible. It is true that in cases of primary cancer of the body of the uterus pain is often an early symptom, but, as is well known, in by far the largest number of such cases the disease begins in the cervix, and here what has been said above applies. Another erroneous prevailing impression is that the disease is necessarily one of advanced life. Now, whilst this is so as regards primary cancer of the body of the uterus, it is certainly not so as regards the cervix. We not rarely meet with cases of the latter class between the ages of twenty-five and thirty, and after thirty they become comparatively common. Again, we must not lose sight of the fact that there is not infrequently some misapprehension as to there necessarily being an offensive discharge in cases of cancer. Such a discharge is practically always present sooner or later, but it is usually later; the point to be remembered is that in many early cases of cancer of the uterus the discharge is not at all offensive. This applies to both classes of cases. The absence of an offensive discharge must not for a moment be taken as warranting a conclusion that the patient is not suffering from cancer. On the other hand, whilst there is almost always an offensive discharge at some period or other in cases of cancer, an offensive discharge does not of course by itself warrant a diagnosis of cancer.

All whose practice deals more especially with the diseases peculiar to women have doubtless seen cases of advanced uterine cancer where valuable time has been lost in unavailing treatment by internal remedies and the use of some simple vaginal douche. In some of these cases perhaps no examination whatever may have been made. Great advances, however, have been made of late years in the diagnosis of cancer, and so far as the profession itself is concerned there is a more general recognition of the significance of intermenstrual hæmorrhages. Now, whilst any intermenstrual hæmorrhage should excite a suspicion that there may be something seriously amiss, and lead to a thorough investigation, it is not too much to say that hæmorrhage after the menopause is generally due to cancer. There are, of course, exceptions to this as to most other rules, but the safest plan is to regard any case of hæmorrhage after the menopause as possibly due to cancer till an examination has been made. Even if no evidence of anything abnormal is discovered by an ordinary vaginal examination, it should not be forgotten that the disease may be beginning in the supra-vaginal cervix, or even in the body of the uterus, and certainly the persistence of a sanious discharge should lead to a further investigation—that is to say, the cervix should be dilated, so that the condition of the supra-vaginal cervix, and of the interior of the body of the uterus, may be ascertained.

IT would seem at first sight a comparatively simple matter to determine whether in a given country and for a given period crime has increased or decreased; but the problem is not so simple as it looks and experts are found to differ in their conclusions. Difficulties arise from different classifications of crime, from varying lengths of sentences according to the special views of those concerned in the administration of justice or the altered temper of the times, from a change in public sentiment regarding such matters as capital punishment and transportation, from different methods in dealing with juvenile offenders and from fluctuations in preventive legislation. These are only a few of the factors which introduce doubt and difficulty into the correct appraisement of criminal statistics, and we must not be surprised if this department of sociology presents some of the perplexities which more or less beset all sociological problems. An attitude, however, of suspended judgment on such a broad question as whether in this country crime is tending to increase or decrease cannot be very long maintained, and whilst allowing full weight for the special difficulties of the case we naturally crave for some assurance that all the legislative educational and philanthropic effort in which the century has been so rich is bearing fruit. Hence Sir EDMUND DU CANE'S article in the current number of the *Nineteenth Century* will be rather a relief to many of his readers. He writes avowedly to controvert the gloomy views of some recent authorities who have sought to show that the improvement in criminal statistics is apparent rather than real, and that there is no satisfactory evidence that advancing civilisation and the spread of education tend to make men morally better. A conclusion like this would

not only be profoundly disappointing to all believers in human progress, but it would tend to paralyse all effort put forth for the betterment of the degraded and criminal classes. It is very satisfactory to find that Sir EDMUND DU CANE, with his large official experience and his association with those most likely to possess trustworthy information on the subject, is decidedly of opinion that crime is undergoing a sensible and progressive decrease.

First, as to the returns of the prison population since 1877. These indicate not only a decrease, but, what is much more important, a practically continuous annual decrease. The average number in local prisons in 1876–77 was 20,361, while in 1891–92 it was 12,663. In 1869 there were 2006 sentences of penal servitude, in 1891 the number was 751. Here we have a notable and most satisfactory decrease. In reply to those who allege that this decrease can be explained by a shortening of sentences, Sir EDMUND DU CANE says that, even if this shortening of sentences be a factor in the case, yet "there is no evidence of the consensus of such a large number of independent sentencing courts as would justify the assertion as a general rule"; further, that a shortening of sentences "would not account for the continuance of the fall year after year, for the sentences have certainly not been proportionately shortened year after year." Equally inadequate, in the writer's view, is the suggestion that this decrease may be explained as due to the general substitution of fining for imprisonment.

Again, a great fallacy would seem to lurk in the argument of those who regard the increase in the number of juveniles in reformatories and industrial schools as an evidence of an increase of crime. In point of fact, these institutions are of comparatively recent growth, their great development dating from the Reformatory and Industrial Schools Acts of 1866. Further, the returns from these two classes of institution are fallacious if considered *en bloc*. The reformatories are "penal and reformatory institutions for young persons convicted of crime and correspond therefore to prisons. The industrial schools, on the other hand, are preventive institutions for children who have not been convicted, but might fall into crime for want of proper care and training." It is clear, therefore, that an increased number of juveniles in the industrial schools would point simply to greater activity on the part of the authorities as regards preventive measures and would throw no light on the problem before us.

Further evidence is afforded by the annual police returns regarding the number of what are known to them as the criminal classes. Since 1867–68 the decrease in the number of these classes has been practically continuous and has fallen from 87,668 to 51,095. As to crime, the police returns point to a not less satisfactory decrease. The Commissioner of Police of the Metropolis in a recent report shows that the felonies in 1890 were fewer by 2053 than in 1889, and points out that the felonies are now less than half the number considered normal twenty years ago. The Chief Constable of Liverpool reports that the number of indictable offences committed during the year ending Sept. 29th, 1891, was 907 less than during the year ending Sept. 29th, 1890, and 967 less than the year previous to that, whilst minor offences of violence had fallen from 1952 to 1546. Mr. GROSVENOR of the Home Office, in a paper read before the Statistical Society in 1890, summed up his conclusions by saying: "It is obvious that these combined causes have materially assisted in securing the abatement shown to have taken place in nearly all classes of crime during the last twenty years; whilst the great reduction in the number of known thieves and other suspected persons at large, as well as in the houses of bad character which they frequent, and more especially the extraordinary diminution in the number of receivers of stolen goods, has made manifest the increasing efficiency of the police. When to this is added the fact that during the period in question the population of England and Wales has increased by nearly six millions and a half, we must admit that the many agencies enlisted for the purpose of diminishing the number of criminals have been most successfully applied, and the result cannot fail to afford the utmost satisfaction and encouragement to all who are anxious for the improved moral and physical advancement of our nation."

These conclusions afford a solid basis for a hopeful prognosis regarding the future of crime. It would be contrary to all the probabilities of the case that education, philanthropy, legislation, the wider diffusion of material comfort, and the general spread of refining and humanising influences should fail to produce any diminution in the prevalence of crime. We are told by the pessimists that education only gives us more adroit criminals and that increase of wealth only multiplies the temptations to fraud and violence. We decline to accept so disheartening a view as this, and we are thankful to Sir EDMUND DU CANE for strengthening our belief in the moral progress of humanity.

Annotations.

"Ne quid nimis."

THE INTERNATIONAL MEDICAL CONGRESS.

AN Italian correspondent writes under date, Rome, March 19th:—"Only six months now divide us from the opening of the Congress and still the work of preparation proceeds with alacrity. To the lists already given of important provincial committees organised to coöperate with the central committee in promoting the solidarity of the Italian representation I have now to add that of Milan, over which Dr. Giovanni Rosmini has been elected to preside, the vice-president being Dr. Francesco Denti, and the secretaries Drs. Pietro Ramazzotti, Torquato Sironi and Giuseppe Pessina. The 'Esposizione,' which is to constitute so useful and impressive a feature of the Congress, has also an organising delegate from the Milanese province in Dr. Vincenti, well known in every department of practical sanitation. The circular issued by the committee at Milan justly remarks that the profession, not only in the towns, but in the country parishes, includes practitioners of approved knowledge, sagacity and experience, whose presence at the Congress is on every ground desirable, and to these it addresses an urgent invitation to seize the opportunity of exchanging views with their brethren not less thoroughly equipped from other parts of the peninsula. In this way the 'fratellanza' between all branches and representatives of the healing art in Italy is furthered, as a preparation for that larger 'fratellanza' (or brotherhood) which unites practitioners of all nationalities in the same grand cause of medical science and endeavour. Meanwhile the correspondence between the central committee and the profession in non-Italian countries has fructified satisfactorily. This has been conducted mainly

through the presidents of the nineteen sections into which the work of the Congress has been distributed, and the result has been that, partly through direct appeal and partly through intermediate negotiation, men of light and leading in the various subjects these sections cover, have promised, or have actually sent in, contributions bearing on the topics prescribed. Within the last few days, in fact, communications in this sense have been received from Great Britain, France, Spain, Germany, Switzerland, Austria-Hungary, Belgium, Holland, Denmark, Sweden and Norway, Russia, Turkey, Egypt, the United States and Australasia. A representative of the Congress, when passing through Calcutta, had an audience of the Viceroy, and, at the request of the Indian Government, the central committee has instituted in the Section of Hygiene a subsection to deal with Asiatic cholera, its etiology, its mode of propagation, its prevention and its treatment. The Surgeon-General (Dr. W. R. Rice) has, I understand, deputed Dr. Cunningham to represent Indian medicine at the Congress. The French Minister of Marine will also send a delegate in the person of the medical officer-in-chief of the navy, Dr. Rouvier, member of the superior council of the sanitary service of the fleet. The Peruvian Government has, further, notified the central committee that its deputy at the Congress will be Dr. Aurelio Alarco, one of the most distinguished consultants in the school at Lima; whilst the Governments of Paraguay, Columbia and Ecuador have responded to the invitation of the central committee by an undertaking to nominate their representatives *quam primum*. At the Policlinico itself—the seat of the Congress outside the Porta Pia and near the British Embassy—the Palazzo dell'Amministrazione, in which the sittings will be held, is progressing rapidly towards completion. The magnificent cornice of the palace—a *chef-d'œuvre* of the Society of the Stuccatori (artists in stucco ornamentation)—has, thanks to the dry, sunny weather, been brought to a close in a wonderfully short time, the work employing as many as forty hands a day. This part of the building, indeed, will rank as one of the best artistic productions of modern Rome, worthy of the institution it ornaments and of the Congress which will be the first to witness it."

THE SHOP HOURS BILL.

WHATEVER may be the ultimate fate of the measure introduced by Sir John Lubbock for the reduction of hours of labour in shops, it is evident that public opinion as a whole is convinced of its utility and of its moderation. Twelve, fourteen and sixteen hours a day are terms which under any rational system of trade would much more than satisfy all commercial exigencies. Their duration bears no true proportion to the work in hand. It is merely the outcome and expression of an unregulated struggle for existence amongst traders, in which the public health and every other interest is subordinated to the ambition or the supposed necessities of the individual. Its ruinous influence upon the health of the employed calls for no fresh assertion on our part. This has been proved beyond question in the experience of every medical practitioner whose calling brings him into contact with the class in question. Clergymen and others have protested against its demoralising tendency, for obviously the unfortunate whose every waking hour on every day save one in the week is practically spent in a routine of work or business worry can hardly be capable in any remaining fraction of leisure, even if he has the opportunity, of endeavours after mental or moral self-improvement. Life in his case becomes, but for the mental slavery, we will not say activity, involved in his business duties, little better than a mere process of physical effort alternated with hurried attention to bodily necessities and appetites. It is, therefore, not to be wondered at that we find trade councils, factory inspectors, shopkeepers themselves and shop assistants all over the country, though uncombined by any plan of alliance, yet agreed in a general dissent from this established disorder of things. The new Bill is but the voice of the dissentient spirit. It is, therefore, no forced or artificial measure. All that it seeks to do is to assert the right of a preponderating majority to control in an essential matter of trade custom the hostile independence of a small and selfish minority. Its results can be guaranteed as beneficial, its method is regular and constitutional, and its ultimate success must therefore be only a matter of time. It already possesses, in the support of members on both sides of the House of Commons, an earnest of acceptance by the Legislature which we hope will not wait long for its needful confirmation.

BLACK TONGUE.

THE condition in which the dorsum of the tongue is more or less covered by a black patch is not very uncommon, but its etiology is somewhat obscure. It has been called "hyperkeratosis" with the idea that the superficial layer of epithelium becomes hypertrophied, undergoing horny degeneration, with atrophy of some of the cells and a development of black pigment. Drs. Ciaglinski and Hewelke, writing in the *Kronika Lekarska*, describe a case in which they were able to find a mould in the black patch somewhat resembling mucor rhizopodiformis, which contained black pigment. The case was that of a woman who a fortnight previously had had some kind of feverish attack—most probably influenza. The tongue looked as if it had been covered with blacking, the discolouration extending as far back as the circumvallate papillæ. By means of borax washes the tongue became clean in a couple of days. Examination showed a black mould which could be well cultivated on bread or on potatoes at the temperature of the room, but which did not grow at 37° C. It was apparently of a harmless character, for it was injected into the veins of rabbits without effect. Drs. Ciaglinski and Hewelke distinguish two kinds of black tongue—the chronic, due to anatomical changes in the epithelial layer, and the acute, which depends upon the presence of a mould. This is harmless apparently to internal organs, as it does not develop at the temperature of the body.

POPLAR AND STEPNEY SICK ASYLUM: RETIREMENT OF, AND TESTIMONIAL TO, DR. GOLDIE.

EXTENSIVE alterations are in progress at the Poplar and Stepney Sick Asylum, Bromley. The present building was erected under Gathorne Hardy's Act, which enabled unions to combine together for the purpose of treating their sick poor. It was constructed on the pavilion system, and was opened for the reception of patients on Aug. 7th, 1871. It accommodated 586 patients, but the pressure on the institution has been so great during the last ten years that Dr. R. W. Goldie, the medical superintendent, found it necessary to recommend the managers to add three beds to each ward, bringing the total number of beds up to 640. The beds are divided nearly equally between the two sexes. This temporary measure having proved insufficient the managers decided upon erecting two new pavilions at the east end of the institution, where there was a large vacant space used as a recreation ground. The new blocks will accommodate about 200 patients. It is expected that this much-needed extension will be ready for the reception of cases in about twelve months. At the west end of the building a large nursing home is being erected. It will include a large recreation hall and provide rooms for from forty to fifty nurses. After a service of twenty-two years at the hospital, Dr. Goldie has resigned his appointment on account of ill-health and has been succeeded by Mr. W. H. Pearce, formerly house surgeon at the Sheffiel

Hospital and for the last ten and a half years assistant medical officer in the asylum. Before his appointment as the first medical superintendent to the Poplar and Stepney Sick Asylum Dr. Goldie served for three years in a similar capacity at Chorlton Union Hospital, the first hospital in the Poor-law service built upon the pavilion plan. His term of office has been signalised by very considerable activity both in surgical practice and in administrative work, and the asylum is indebted to him for many improvements and additions to the comfort of the inmates. The chief operations performed at the hospital have been lithotomy, hepatotomy, excision of the tongue, lower jaw, head of the humerus, elbow-joint and wrist-joint, and about thirty amputations, including Syme's and Pirogoff's amputations, amputation through the knee-joint and at the seat of election and several through the lower third of the thigh. Virtually, there has been no death-rate, a fact which speaks volumes for the skill of the surgeon and the admirable sanitary arrangements of the hospital. Dr. Goldie retired formally from office on Saturday last, the 18th inst., and the general staff of the hospital embraced the opportunity to present him with a testimonial as a mark of appreciation of his services to the institution, his care for the welfare of the patients and his attention to the interests of the whole of the working staff of the hospital. There were no less than eighty-seven subscribers. The testimonial comprised a dessert service, a silver tankard, a pair of opera glasses and an illuminated address. Complimentary speeches were made by Mr. Pearce (the visiting clergyman), Mr. Foskett (clerk to the board) and Mr. Rivington, who, though not formally appointed to the office of consulting surgeon to the institution, has been called upon with the approval of the board to give his opinion in important surgical cases during the greater part of Dr. Goldie's tenure of office, and has been present at a large majority of the operations performed at the asylum. We may add that some years ago Dr. Goldie was offered by Mr. Stansfeld an inspectorship under the Local Government Board in recognition of his services, but declined it. It is to be hoped that after a short rest his health will be re-established and that he will find a new sphere for the exercise of his undoubted professional and administrative abilities.

ACCIDENTS IN INGUINAL COLOTOMY.

IN a short paper on a year's work at his clinic for Diseases of the Rectum, published in the *New York Medical Journal* of Feb. 18th, 1893, Dr. C. B. Kelsey mentions two cases of inguinal colotomy in which a noteworthy accident occurred. In one case, twenty-four hours after the operation, a remarkable flow of serum, which completely soaked the dressing, was observed, and when the dressing was removed three or four feet of gut were found to have escaped from the wound, and to be "strangled and cold." The wound was opened up, the prolapsed bowel reduced, and the sigmoid flexure again sutured in place. The patient then made an uninterrupted recovery. In the second case, which occurred almost at the same time, a similar sudden flow of serum soaking the dressing was noticed forty-eight hours after the operation. Unfortunately, the attendant did not realise the importance of this, and it was not until some hours later, when the patient was "vomiting and partially collapsed," that the wound was uncovered. "All the bowel that could get out through a two-inch incision in the left inguinal region was out of the body and mixed up with the dressing." It took one hour and a half to separate the bowel and reduce it, but the man sank under the shock of this operation. Dr. Kelsey refers to accidents of an opposite character that have happened. The bowel in those cases slipped back into the abdomen and had to be picked up and secured again to the abdominal incision. These cases are worth special attention because one advantage of inguinal colotomy over the lumbar operation is its extreme simplicity, and some surgeons have attempted to reduce its simplicity to the very lowest point by omitting all suture of the bowel to the abdominal wall and trusting only to a probe or some similar appliance thrust under the bowel through the meso-sigmoid. In view of these accidents it is quite evident that the bowel should be securely fastened to the abdominal incision in such a way as to prevent both its slipping back and the prolapse of further coils of bowel. Opinions may differ as to the best means of doing this. Probably none is better than a single stitch through the meso-colon and the skin on one side of the wound, one at each end through the longitudinal muscular band and both edges of the wound, and two interrupted sutures at each side passing through the muscular and serous coats of the bowel and the skin only.

THE PELLAGRA DEBATE IN THE ITALIAN CHAMBER.

THE one blot on the generally satisfactory health conditions of Italy for the past twelve months was, as the official returns demonstrated, the pellagra—that frightful scourge, whose victims are chiefly to be found in Lombardy and Piedmont, and whose sequelæ, particularly in the third year from the initial attack, are seen in a paralysis, mental as well as physical, which contributes more inmates to the lunatic asylums than any other cause. Its etiology, thanks not only to Italian but to French pathologists, has been lately put on a more scientific basis than hitherto, and Dr. H. Gintrac especially has differentiated it from the "pseudo-pellagræ," at least five in number, which, mistaken for the true malady, have often led to mistakes in treatment and in prophylaxis. By the light of these researches it is of supreme importance that the profession at large and the sanitary authorities in particular should reconsider the means available for preventing as well as curing the disease, and so, not a moment too soon, Signor Suardi-Gianforte interpellated the Minister of Agriculture in the Italian Chamber as to what had been done, and what it was still proposed to do, by way of treatment in the public hospitals and of prophylaxis in the affected districts. He called attention to the vote carried in a former Parliament for the promotion of these therapeutic and precautionary measures, and he asked what success had followed them since their practical enforcement. As to the provisions for the prevention of the malady, he classified them in three groups: (1) That which improves the hygiene of the agricultural labourer by giving him better house accommodation, pure drinking water and better drainage; (2) that which comes to close quarters with his disease and provides sounder food at so-called cheap kitchens and also "locande sanitarie" or health stations, where he can be directly relieved of his more distressing symptoms; and (3) that remoter provision by which his life is made easier to him by better wages, the lightening of taxes, reduction of octroi dues and such like. Under all of these heads there was still much to be effected before an impression, deep and lasting, was made on the pellagra, whilst he admitted that group the second had—in the province of Bergamo, for instance—yielded most satisfactory results, which had also been exhibited on an encouraging scale in other provinces. But how to make the agricultural labourer do for himself what those cheap kitchens and health stations do so well, though all of them too late? How to insure him a comfortable, well-drained, well-appointed dwelling and an increased wage or a remission of taxation sufficient to let him "live and thrive"? Such is the real problem, and its effective solution would mean the rehabilitation of the agricultural poor not in Italy only, but in almost every country in Europe. Signor Suardi-Gianforte concluded an eloquent

appeal for the Italian rural labourer by showing how much the State, in conjuction with the local proprietors and capitalists, could effect for him, and how the result of such action and legislation would be seen in the development of economic and social conditions which would make the pellagra impossible and the elaborate machinery organised to encounter it *une quantité négligeable*. His Excellency Signor La Cava (Minister of Agriculture) replied for the Government and pledged his department to continue its subsidies for the *essiccatoi* or furnaces for drying the maize and destroying the parasite that renders it noxious as food, whilst also maintaining the cheap kitchens and the health stations, "aiding and promoting, as it had hitherto done, the initiative of the private local charities." More important still, as an indication of policy, was his assurance that the Government would place funds at the disposal of provincial committees in aid of the "earning power" of the labourer, and, with this view, had already taken steps with the Lombard savings banks to furnish the subvention required. The "Opere Pie" (Italy's equivalent for State charities), he further suggested, might possibly, by transformations in their working, be made to yield more substantial aid than hitherto to the agricultural poor, and he concluded by reiterating the solicitude of the Government to minimise in the meantime and ultimately to stamp out at its origin the pellagra, which costs Italy so much in men and treasure. Altogether, the official reply was about as satisfactory as Signor Suardi-Gianforte could have looked for—the heavy strain on the country's finances for the army and navy being considered. He accordingly accepted the Ministerial assurances with an expression of trust in their *bona fides*, of hope in their efficacy and of thanks for the fulness and cordiality with which they had been given.

"AKINESIA ALGERA."

UNDER this term Möbius[1] describes an affection of the nervous system characterised by extreme pain upon motion, so that the patient is unable to make any movement whatever. The exact pathological condition which is the cause of this symptom is as yet unknown. It appears only to occur in neurotic individuals, especially in those who are in a bad state of health generally and who are unable to fight against the weakness. The pain is sometimes directly associated with motion, but in other instances follows it, and is experienced not only in the parts of the body which have been moved, but also in other parts, and may finally lead to almost complete loss of motive power, so that the patient is practically paralysed. In addition to this pain, which is the most prominent symptom, other phenomena characteristic of neurasthenia may develop, but hysterical outbursts have not been observed. Möbius considers that this disturbance may be attributed to inherited degeneration of the nervous system; that, as a rule, it follows upon mental strain in patients prone to neurasthenia; and that it must be regarded as a psychical affection. The condition must, however, be considered as more allied to hysteria than to hypochondriasis.

A SCOTCH PUBLIC HEALTH QUESTION.

WE are glad to see that by a question in Parliament Dr. Farquharson has called attention to the subject of our last week's leading article, and that he proposes to take another opportunity of referring to it. The Secretary for Scotland gave a reply which cannot be regarded as satisfactory. He pointed out that under the Local Government Act county councils have power to permit their medical officers to engage in other work. That is not denied by anyone, but under the Local Taxation Act the Secretary for Scotland has power to frame regulations for administration of the grant, and it is only reasonable to suppose that one of the regulations should be that counties must show to the Secretary that their sanitary arrangements are fairly satisfactory before he admits them to a share in it. It is this regulation, framed by his predecessor acting under the advice of the Board of Supervision, that Sir George Trevelyan seems to have decided to abrogate, and his decision is certainly unfortunate.

[1] Deutsche Zeitschrift für Nervenheilkunde, 1892, p. 121.

THE GRESHAM UNIVERSITY COMMISSION.

THE proceedings of the Royal Commission appointed to consider the charter proposed for the formation of a new University in London, to be called the Gresham University, will immediately come to a close. Sir George Young and Professor Ramsay of University College have been heard, and Dr. Wace, the Principal of King's College, will be the last witness, and complete the evidence on behalf of the promoters of the Gresham Charter. We trust that the report of the Commissioners will be published as soon as possible.

PREVALENCE OF FEVER.

DURING the week ended March 11th nearly 1100 cases of scarlet fever were reported in the chief towns of England. More than a third of these belonged to London. Liverpool, Manchester, Sheffield, Swansea and Leicester contributed most of the other cases. Some 300 cases of diphtheria were reported in the same time, the metropolis showing more than half of them. Manchester and Cardiff came next. Enteric fever prevailed most in London and Liverpool. It is pleasing to learn that the mortality from scarlet fever in London exhibits a distinct decline, and the number of patients in the fever hospitals is much less than a month ago. The diphtheria mortality remains much the same, but is still above the average.

HYSTERICAL RAPID RESPIRATION.

IN the last number of the *American Journal of the Medical Sciences* Dr. Weir Mitchell has a paper dealing with this obscure and interesting affection. From his wide experience he is able to formulate a description of the symptoms associated with the condition. The breathing, he says, is largely upper costal, sometimes exclusively so, and the preservation of the relative share between that and the diaphragm is rare. As a rule it is superficial and without appearance of effort. Usually, also, in the early stage the patient is ignorant of the existence of the symptom, but when once the knowledge is acquired the respiration rate is increased by excitement, such as is induced by the mere approach of the nurse or medical attendant. As a rule, too, the symptom occurs only just after sleep, and may be quite absent—indeed, usually is so—during sleep. Sometimes the symptom is the only distinct expression of hysteria or is not present unless the patient is emotionally excited; he does not moreover think that the type of breathing is a possible voluntary product, whilst he regards the affection in males as distinctly rare. Several cases are related which bear out this description, and amongst them one in which there was a curious and anomalous eruption on the leg somewhat rupial in character, which at first appeared as a mass of pimples. These, during a state of trance, became confluent and formed a scab, an excellent illustration of which is given in the paper. The scab was removed, and under it there was found a greyish-white fibrinous material, from the surface of which oozed a little blood. The skin round the edges was thickened, hardened and hyperæmic, and the area was very sensitive. Nothing else unusual was discovered in the patient's condition except a marked contraction of the colour fields, a chart of which is given. Reference is also made to different forms of rapid respiration, and graphic records of the varieties of these

are given. As was to be expected from the wide experience of Dr. Weir Mitchell and his well-known faculty of accurate observation, the paper is a very interesting one and calculated to assist in the elucidation of an obscure and unusual condition.

ILLNESS OF PRINCE FERDINAND OF BULGARIA.

WE understand that Prince Ferdinand of Bulgaria is suffering from an acute inflammation of the right middle ear, complicated with severe neuralgia of the occipital nerves. Professor Politzer has performed paracentesis of the tympanum. The patient is progressing favourably.

FACULTY OF MEDICINE OF THE UNIVERSITY OF BRUSSELS.

DR. WARNOTS having been appointed Professor of Operative Surgery, the Dean of the Faculty of Medicine of the University of Brussels has appointed Dr. Albert Mills as interpreter for the examinations of British and American candidates who present themselves for the degree of M.D. Brussels. All applications concerning the examination should be sent to Dr. Albert C. Mills, 25, Boulevard Bischoffsheim, Brussels.

CENTENARY OF THE DEATH OF JOHN HUNTER.

IN connexion with the conversazione to be held at the Royal College of Surgeons of England on July 5th, 1893, to celebrate the jubilee of the Fellowship of the College, it has been decided, as this year is also the centenary of the death of John Hunter, to organise an exhibition of pictures, MSS., books, furniture &c. connected with the great surgeon. In addition to the articles which are the property of the Royal College of Surgeons the exhibition will include other relics, the loan of which has been kindly promised by the present possessors. The librarian of the College will be pleased to give further information to any owner of Hunterian relics who may be willing to lend them for exhibition.

THE QUEEN'S VISIT TO FLORENCE.

"OUR Lady of Flowers," writes an Italian correspondent under date Florence, 20th inst., "has for some time been looking her best, as if in anticipation of the royal visit which will be an accomplished fact by the time this letter sees the light. Cloudless skies and a genial sun invite the resident out of doors and stimulate him to brisk exercise, all the brisker as he feels the freshness, not to say sharpness, of the air wafted down by the *tramontana* from the Apennines. There is still snow on the more elevated peaks, which [act as refrigerators and in the early morning and late evening impart a sting to the wind against which the pedestrian or the carriage inmate should guard. This is just the weather which, on the occasion of her last visit, Her Majesty most enjoyed — enjoyed, in fact, so much that the traditional cavillings at the 'treacherous Florentine spring' were rather silent during the Queen's *villeggiatura*. The interest taken by Her Majesty in most things Florentine includes many of the charitable institutions of the city and suburb, notably the admirable organisation of the 'Misericordia,' so often described in THE LANCET. That picturesque corps in which peer coöperates with peasant, scholar and artist with tradesman and mechanic, in relieving the sick, transporting them from residence to hospital, or, when medical art has proved abortive, conveying them to the mortuary chapel, is one of the most impressive features of daily life in Florence and merited the minute inquiries into its origin and working addressed by Queen Victoria to its titular chief. Then, again, Her Majesty's known solicitude for the better treatment of the lower creation is expected, as in 1888, to give a salutary stimulus to the somewhat languishing 'Società' for the 'Prevention of Cruelty to Animals'—a 'società,' it is fair to say, much more efficacious in Florence than in Rome or Naples, but still, even in the former capital, far short of the required efficiency. Another organisation in which the humanitarian instincts of the British Queen have quickened Florentine charity is that of the Society for the Protection of Abandoned Infants, and here again the promoters of the movement look to Her Majesty's presence and encouragement as effective influences for good. Concurrently with these special institutions for the relief of suffering, some notice is claimed for that other organisation, of which the leading consultants of the city are at the head, directing the operations of quite a little army of medical workers, mostly students, for the treatment of patients too necessitous to be able to call in a regular practitioner. This charity, set on foot since Her Majesty's last visit and from time to time commented on in THE LANCET, is proud to claim the notice of a Sovereign who effectively promotes so many kindred charities at home and who derives no greater gratification than from the spectacle of the spread of the practical humanitarian spirit in the countries in which she sojourns. Public hygiene, too, seems to draw fresh encouragement from Her Majesty's presence. All the sanitary arrangements of the city, including the 'nettezza pubblica' (street scavenging), are already placed under more thorough and vigilant surveillance, and it is to be hoped that these salutary regulations will remain in force long after the immediate occasion that has evoked them has disappeared. As I write the Società Fiorentina d'Igiene has announced the proceedings of its last sitting, at which the all-important question of water-supply was again discussed and practical suggestions were made for the speedy and effective creation of the new aqueduct which is to furnish Florence with a perennial provision of *acqua potabile*. Such are a few of the indications, interesting to the profession, which Her Majesty's approaching visit has called forth—indications which have their place side by side with the other incidents of the Queen's sojourn and explain in some measure the enthusiasm which that sojourn awakens in Italy's most educated city, anxious as it is to bring its social standard up to the British level."

PATHOLOGY OF PARALYSIS AGITANS.

IN the *Zeitschrift für Heilkunde* von Ketscher has an important paper dealing with this much-disputed subject. An abstract of it is given in a recent number of the *Neurologisches Centralblatt*. The cases of paralysis agitans, with reference to their pathological anatomy, are divisible into two classes—those in which the examination has furnished negative results, and those in which various changes have been found in the nervous system, such as hyperplasia of the connective tissue and neuroglia of the spinal cord, alterations in the nervous tissue itself and vascular changes. Similar changes have been described as occurring in the medulla and pons. Three cases of undoubted paralysis agitans have been investigated by von Ketscher. The nervous system, central and peripheral, was examined, and in all three cases changes were found in both regions. The nervous structures showed atrophy, the ganglion cells of the brain were deeply pigmented and altered in form, the nerve fibres, both in the peripheral nerves and in the spinal cord, were degenerated and had in some instances disappeared, whilst the muscular fibres also were atrophied or degenerated. The neuroglia was thickened, especially around the vessels and mostly in the posterior and lateral columns. The vessels also were altered, their walls thickened and there were miliary aneurysms and small hæmorrhages present. Similar changes, but slighter in degree, were found as senile changes in patients not the subjects of paralysis agitans; von Ketscher concludes, with Borgherini and others, that paralysis agitans is only the expression of an extreme and

premature senility of the nervous system, and he is of opinion that the primary changes are in the vessels, those in the nervous structures being secondary.

THE HEALTH OF LORD SALISBURY.

WE are glad to be in a position to state that Lord Salisbury is steadily recovering from his attack of influenza.

MEDICAL AID ASSOCIATIONS AND THE GENERAL MEDICAL COUNCIL.

WE understand that the committee on Medical Aid Associations sat on Friday for seven hours. Six or seven lay representatives of the Associations attended and gave evidence of the working of such institutions, including secretaries or presidents of the Associations at Wolverhampton, Lincoln, Northampton, Luton and Gloucester.

THE SCOTCH FORM OF OATH.

THE Home Secretary, Mr. Asquith, replying to Dr. Farquharson in the House of Commons on the 13th inst., stated that circulars containing the necessary information as to the correct form of administering the oath would be sent to all justices' clerks and coroners. It may be well to point out that similar circulars will have to be sent in respect of grand juries, since we learn from a correspondent that, on his application to be sworn with uplifted hand before a grand jury, the foreman, whose duty it was to administer the oath, was unaware of the form. Fortunately our correspondent had it and was duly sworn. The various high sheriffs of the counties would probably be the readiest medium by which the requisite information could be conveyed.

THE Royal Commission on Vaccination met on Wednesday in Great George-street, under the chairmanship of Sir Richard Paget, in the absence of the Lord Chancellor. Dr. Klein and Dr. William Ogle, Superintendent of Statistics in the office of the Registrar-General, gave evidence, and the Commission adjourned over the Easter recess.

MR. BERNARD PITTS, M.Ch.Cantab., F.R.C.S., Senior Assistant Surgeon to St. Thomas's Hospital, has been appointed Joint Lecturer on Surgery in the Medical School in succession to Sir W. Mac Cormac.

THE Right Hon. Thomas H. Huxley, Hon. D.C.L. Oxon., F.R.S., F.R.C.S. &c., will deliver the Romanes Lecture at the University of Oxford on Thursday, May 18th.

PROFESSOR VIRCHOW.

SINCE his arrival in England to deliver the Croonian Lecture of the Royal Society Professor Virchow has been the recipient of many honours. On the evening of Thursday, March 16th, he was entertained at a banquet, at which Lord Kelvin presided. We regret that we have been unable to provide our readers with an elaborate account of the proceedings of a meeting the successful nature of which was due in great measure to the interest taken in it by members of the medical profession and to their attending in large numbers to do honour to their eminent German *confrère*. The committee of management curiously enough decided not to invite representatives of the medical press to the banquet. It is incomprehensible that a body of managers should take advantage of the services of the medical press for the purpose of bringing the proposed banquet under the notice of the profession and should have neglected to invite the representatives of the organs of the profession, although it would appear that the daily papers were furnished with facilities for reporting the proceedings in their columns. We are sorry to have to strike one discordant note on such a harmonious occasion, but we feel that in the interests of the profession the matter should not be allowed to pass by without a few words of protest.

We append the list of the stewards who took part in the banquet given in honour of Professor Virchow on March 16th, 1893:—W. H. Allchin, Esq., M.D.; C. Arkle, Esq., M.D.; J. Andrew, Esq., M.D.; Sir Henry Acland, Bart., K.C.B.; W. Anderson, Esq., F.R.C.S.; W. H. Broadbent, Esq., M.D.; Sir James Crichton Browne, LL.D., F.R.S.; T. Bryant, Esq., President of the Royal College of Surgeons; R. Baines, Esq., M.D.; A. T. Brett, Esq., M.D.; H. C. Bastian, Esq., M.D., F.R.S.; F. Gordon Brown, Esq., President of the Hunterian Society; J. S. Bristowe, Esq., F.R.S., President of the Medical Society; Hamilton Bland, Esq., M.D.; Stanley Boyd, Esq., F.R.C.S.; F. G. Barford, Esq., M.D.; Lauder Brunton, Esq., M.D., F.R.S.; A. E. Barker, Esq., F.R.C.S.; T. Bridgwater, Esq., LL.D.; W. Bennett, Esq., F.R.C.S.; R. Bowles, Esq., M.D.; R. Barwell, Esq., F.R.C.S.; Adolph Bronner, Esq., M.D.; David Berry, Esq.; Surgeon-Captain R. Ashton Bostock; Sir George Buchanan, M.D.; B. E. Brodhurst, Esq., F.R.C.S.; C. Beevor, Esq., M.D.; Lionel Beale, Esq., M.D.; R. A. Bickersteth, Esq., F.R.C.S.; M. Carteighe, Esq., President of the Pharmaceutical Society; Sir Andrew Clark, Bart., President of the Royal College of Physicians and of the Royal Medical and Chirurgical Society; E. M. Crookshank, Esq., M.B.; Sir Thomas Crawford, K.C.B.; W. Corfield, Esq., M.D.; J. Cavafy, Esq., M.D.; J. Cox, Esq., M.D.; Surgeon-General Cornish, C.B.; J. Cagney, Esq., M.D.; J. Couper, Esq., F.R.C.S.; H. Clutton, Esq., F.R.C.S.; W. S. Church, Esq., M.D.; R. Brudenell Carter, Esq.; J. Curnow, Esq., M.D.; S. Coupland, Esq., M.D.; W. Cheadle, Esq., M.D.; F. H. Champneys, Esq., M.D.; T. F. Chavasse, Esq., M.D.; J. Jackson Clarke, Esq., F.R.C.S.; Alfred Cooper, Esq., F.R.C.S.; G. Anderson Critchett, Esq., F.R.C.S. Edin.; Sir Dyce Duckworth, M.D., LL.D.; W. H. Dickinson, Esq., M.D.; Sir William Dalby, F.R.C.S.; Arthur Durham, Esq., F.R.C.S.; Frederick Durham, Esq., F.R.C.S.; N. Davies-Colley, Esq., F.R.C.S.; A. H. Doran, Esq., F.R.C.S.; C. T. Dent, Esq., F.R.C.S.; J. J. Dunbar, Esq., M.D.; S. Delépine, Esq., M.D.; Norman Dalton, Esq., M.D.; W. R. Dakin, Esq., M.D.; W. Day, Esq., M.D.; James Davison, Esq., M.D.; James Duncan, Esq., M.D.; G. Eastes, Esq., F.R.C.S.; G. Elder, Esq., M.D.; A. Eddowes, Esq., M.D.; Sir John Evans; Professor Michael Foster, M.D., F.R.S.; Sir Walter Foster, M.D., M.P.; Sir Joseph Fayrer, K.C.S.I., M.D.; R. Farquharson, Esq., M.D., M.P.; R. Flachs, Esq., M.D.; O. H. Fowler, Esq., M.D.; H. M. Fletcher, Esq., M.D.; Willoughby Furner, Esq., M.D.; David Ferrier, Esq., M.D., F.R.S.; W. H. Forsbrook, Esq., M.B.; J. F. Goodhart, Esq., M.D.; J. Glover, Esq, M.D.; Sir Archibald Geikie, LL.D., Foreign Secretary of the Royal Society; A. Pearce Gould, Esq., F.R.C.S.; W. C. Grigg, Esq., M.D.; John Gay, Esq.; C. Golding-Bird, Esq., F.R.C.S.; R. J. Godlee, Esq., F.R.C.S.; C. Godson, Esq., M.D.; W. R. Gowers, Esq., M.D., F.R.S.; H. Gervis, Esq., M.D.; J. H. Gladstone, Esq., Ph.D., F.R.S.; G. Harley, Esq., M.D., F.R.S.; Sir G. Humphry, M.D., F.R.S., President of the Pathological Society; E. Hart, Esq.; F. Hawkins, Esq, M.B.; G. E. Herman, Esq., M.D.; J. Hutchinson, Esq., F.R.S.; J. Hutchinson, Esq, jun, F.R.C.S.; Roger J. Hutchinson, Esq.; M. Handfield-Jones, Esq., M.D.; Victor Horsley, Esq., F.R.S.; R. Harrison, Esq., F.R.C.S.; W. Hunter, Esq., M.D.; T. C. Hayes, Esq., M.D.; Donald Hood, Esq., M.D.; R. J. Bliss Howard, Esq., F.R.C.S.; W. A. Hollis, Esq., M.D.; W. H. Hamer, Esq., M.D.; the Right Hon. Thomas Huxley, LL.D., D.C.L.; Charles Higgens, Esq., F.R.C.S.; Sir George Johnson, M.D., F.R.S.; H. Juler, Esq., F.R.C.S.; Brigade-Surgeon Johnston; Lord Kelvin, President of the Royal Society; Norman Kerr, Esq., M.D.; E Klein, Esq., M.D.; A. A. Kanthack, Esq., F.R.C.S.; J. S. Keser, Esq, M.D., F.R.C.S.; A. L. Kellgren, Esq., M.D.; J. A. Kingdon, Esq., F.R.C.S.; J. G. Douglas Kerr, Esq., M.B.; J. B. Lawford, Esq., M.D.; P. W. Latham, Esq., M.D.; Sir Trevor Lawrence, Bart.; Sir Joseph Lister, Bart., F.R.S.; John Langton, Esq., F.R.C.S.; David Little, Esq., M.D.; James Little, Esq, M.D.; Edward Law, Esq., M.D.; Malcolm Morris, Esq., F.R.C.S. Edin., President of the Harveian Society; Sir William Mac Cormac, F.R.C.S.; Shirley F. Murphy, Esq.; F. J. Mouat, Esq., M.D., LL.D.; S. Mills, Esq.; A. T. Myers, Esq., M.D.; Howard Marsh, Esq., F.R.C.S.; A. B. Myers, Esq., M.D.; Allan Macfadyen, Esq., M.D.; Sidney Martin, Esq., M.D.; Norman Moore, Esq., M.D.; J. A. McIntyre, Esq., M.D.; W. Marcet, Esq., M.D.;

C. Macnamara, Esq., F.R.C.S.; Ludwig Mond, Esq.; A. Mond, Esq.; J. Masters, Esq., M.D.; T. J. Maclagan, Esq., M.D.; Gustave Mellin, Esq.; E. Nettleship, Esq., F.R.C.S.; W. M. Ord, Esq., M.D.; Rev. A. W. Oxford; Bernard O'Connor, Esq., M.D.; J. Owen, Esq., M.D.; John W. Ogle, Esq., M.D.; R. Douglas Powell, Esq., M.D.; G. W. Potter, Esq., M.D.; Sir James Paget, Bart., F.R.S.; W. O. Priestley, Esq., M.D.; H. Port, Esq., M.D.; F. W. Pavy, Esq., M.D., F.R.S.; H. Page, Esq., F.R.C.S.; W. H. Platt, Esq.; H. Power, Esq., F.R.C.S.; J. F. Payne, Esq., M.D.; P. H. Pye-Smith, Esq., M.D., F.R.S.; D'Arcy Power, Esq., F.R.C.S.; G. V. Poore, Esq., M.D.; J. Pollock, Esq., M.D.; G. Newton Pitt, Esq., M.D.; J. Inglis Parsons, Esq., M.D.; Sir Richard Quain, Bart., M.D., F.R.S., President of the Medical Council; Sir William Roberts, M.D., F.R.S.; J. Russell Reynolds, Esq., M.D., F.R.S.; M. Armand Ruffer, Esq., M.D.; H. D. Rolleston, Esq., M.B.; F. Roberts, Esq., M.D.; E. W. Roughton, Esq., M.D., F.R.C.S.; Sir Henry Roscoe, M.P., F.R.S.; A. W. Mayo Robson, Esq., F.R.C.S.; W. Knowsley Sibley, Esq., M.D.; Felix Sémon, Esq., M.D.; T. Smith, Esq., F.R.C.S.; Sir William Savory, Bart., F.R.S.; Professor Simpson, M.D.; James Startin, Esq.; A. E. Sansom, Esq., M.D.; Professor W. R. Smith; Gilbart Smith, Esq., M.D.; Greig Smith, Esq., M.D.; Eustace Smith, Esq., M.D.; Professor Sinclair, M.D.; Joseph Soffiatini, Esq., M.D.; S. J. Salter, Esq., F.R.S.; J. E. Squire, Esq., M.D.; Brigade-Surgeon Scriven; S. J. Sharkey, Esq., M.D; Professor Schäfer, F.R.S.; H. Sainsbury, Esq., M.D.; Sir Henry Thompson, F.R.C.S.; W. Tay, Esq., F.R.C.S.; J. Knowsley Thornton, Esq., M.B.; F. Treves, Esq., F.R.C.S.; J. H. Marcett Tims, Esq., M.D.; Frederick Taylor, Esq., M.D.; Reginald Thompson, Esq., M.D.; W. Bezly Thorne, Esq., M.D.; W. Tyson, Esq., M.D.; T. Pridgin Teale, Esq., F.R.S.; Nestor Tirard, Esq., M.D.; D. Hack Tuke, Esq., M.D., LL.D.; Edgcombe Venning, Esq., F.R.C.S.; A. J. Venn, Esq., M.D.; W. Hale White, Esq., M.D.; C. Theodore Williams, Esq., M.D.; S. Wilks, Esq., M.D., F.R.S.; A. Willett, Esq., F.R.C.S.; T. Outterson Wood, Esq., M.D.; F. A. Warner, Esq., F.R.C.S. Edin.; Hermann Weber, Esq., M.D.; G. Sims Woodhead, Esq., M.D.; Dawson Williams, Esq., M.D.; Edward Woakes, Esq., M.D.; John Williams, Esq., M.D.; R. W. Larry, Esq., M.D.; Thomas Wakley, Esq., F.R.C.S.; Thomas Wakley, Esq., jun.; W. Whistler, Esq., M.D.

On Friday, the 17th inst., Professor Virchow was enrolled as an Honorary Fellow of the Irish Medical Schools' and Graduates' Association. We report the proceedings in detail in another column.

At a special congregation of the University of Cambridge held on Tuesday, the 21st inst., the degree of Doctor of Science *honoris causâ* was conferred upon Professor Virchow. The following was the speech delivered by the Public Orator:—"Dignissime domine, domine Procancellarie, et tota Academia: Universitatis Berolinensis Rector Magnificus, vir non modo de medicina et salute publica, sed etiam de anthropologia, de ethnologia, de archæologia præclare meritus, vir et sexagesimo et septuagesimo exacto ætatis anno honoribus amplissimis cumulatus, satis magnum hodie præbet dicendi argumentum. Ipse laude nostra maior, laudes tamen suas (qua est modestia) invitus audiet; atqui laudes illas non verba nostra qualiacumque, sed ipsius opera insignia, ipsius discipuli illustres, ipsius denique orationes disertissimæ, etiam ipso invito, satis clare loquuntur. Legistis fortasse orationem illam in qua, Rectoris munus nuper auspicatus, studiorum Academicorum orbe universo lustrato, partium liberalium dux et signifer olim insignis dixit veram Academiæ libertatem esse libertatem docendi, libertatem discendi; ostenditque, qua potissimum mentis disciplina iuventus Academica discendi amore vere liberali imbui posse videretur. Legistis certe, fortasse etiam audivistis, orationem alteram in qua nuperrime inter scientias biologicas locum pathologiæ proprium vindicavit, et, studiorum suorum origines repetens, non modo Harveii nostri merita immortalia denuo commemoravit, sed etiam Glissonii nostri gloriam prope intermortuam ab integro renovavit. Harveii quidem in doctrina, *omne vivum ex ovo* nasci, lacunam magnam relictam esse constat; lætamur lacunam tantam ab eo magna ex parte esse expletam qui primus omnium re vera probavit *omnem cellulam e cellula* generari. Ergo rerum naturæ investigator tantus, tot illustrium præsertim medicorum in Academia, titulo nostro honorifico iure optimo decoratur. Etenim ubicumque florent medicinæ studia cum rerum naturæ observatione exquisita feliciter coniuncta, talium virorum nomina in honore maximo non immerito habentur. Talium certe virorum per labores verba illa vetera vera facta sunt, quæ Salutis in templo supra portam inscripta esse debent:—*sine rerum naturæ cognitione trunca et debilis est medicina.* Duco ad vos Regiæ Societatis Londinensis unum e sociis extraneis, virum gentis Teutonicæ inter decora numeratum, RUDOLFUM VIRCHOW."

On the 23rd inst. the honorary degree of D.C.L. was conferred upon our distinguished visitor by the University of Oxford.

A CRITICAL EXAMINATION OF THE SO-CALLED "LEICESTER SYSTEM" OF ISOLATION AND QUARANTINE.

BY A. T. BREMNER, L.R.C.S., L.R.C.P. EDIN.,
MEMBER OF THE LEICESTER FEVER HOSPITAL COMMITTEE.

THE present outbreak of small-pox in Leicester began in the early part of September, 1892, and the time is now opportune to enter into a critical review of the "Leicester method"; to compare facts which can be adduced in its favour with those other facts which tend towards its discredit, and to throw the full light of day upon this "system" with all its faults and failings. As a preface it may be remarked as a singular coincidence that the pæans of praise which are sung in season and out of season on behalf of this much-vaunted system proceed out of the mouths of members of the anti-vaccination party. The supposed brilliant results of the Leicester system have been appropriated by them as the strongest available argument in favour of their peculiar tenets, and these results are set forth for the admiration of an incredulous world as an "object lesson" to be worthily imitated by less enlightened communities. We are asked to gaze upon the "marvellous success" which has enabled Leicester to stamp out small-pox on every occasion (except the present one), and to note that this success is obtained without recourse to vaccination. It is somewhat difficult to obtain any clear definition of what the Leicester method really is. For my purpose it will be sufficient to quote the description given by Mr. J. T. Biggs, a member of the Leicester town council, and it is needless to say a leader of the anti-vaccination movement. Writing in the *Vaccination Inquirer* on Nov. 1st, 1892, he says: "The marvellous success which for the past twenty years has attended the efforts of the sanitary authorities at Leicester in stamping out small-pox without recourse to vaccination is now universally known and admitted. What is known as the 'Leicester method' is now adopted and practised by almost all sanitary authorities everywhere, whether they do or do not profess to believe in the efficacy of vaccination; but from the original 'model' there has been considerable departure by would-be imitators. That which in Leicester has become part of the life of a free people has in many other places, in the hands of irresponsible authorities guided by medical interference and prejudice, become an engine of despotic power. What, then, is really our procedure on the notification of a case of small-pox? This will, perhaps, be best described in the identical words of our chief sanitary inspector: 'When a case is reported I at once go to the infected house and try to ascertain where the disease was contracted, where the patient has been working, where he has been visiting, and his movements generally for the last ten or twelve days. I also make a point of seeing all persons who have visited the infected house during the time stated; in addition, I visit all factories and workshops where other members of the family have been employed; and by this means have been able to get cases removed when the first symptoms of the disease appeared. Immediately on the removal of the patient I superintend the fumigation of the house with sulphur; liquid disinfectants are used freely in the drains and about the yard, and the ashpit is emptied and disinfected; the next day the bedding is taken to the disinfecting chamber and subjected to the hot air process. Up to the present time I have succeeded in getting almost every person connected with the infected houses into quarantine. In a very few cases I have experienced opposition.'"

It is at once apparent that there is no novelty in this, except in the exclusion of vaccination from the means employed, and with the definition as it stands I find no fault; but I must call attention to the very evident fact that isolation as a means of preventing the spread of small-pox and other infectious diseases has long been recognised as of the

highest importance. It is not peculiar to Leicester; on the contrary, such means for isolation are supplied by the sanitary authorities of every large town in the kingdom and of many rural districts, and are carried out in many towns more rigorously and more efficiently than in Leicester. I may here express my ardent appreciation of the principle of isolation and quarantine, with the distinct proviso that this principle to be effectual must be carried out on rational and scientific lines. It is puzzling to ascertain why any special credit should be taken for this procedure when we reflect that the advantages of isolation have been known from an early period of the world's history, and were appreciated even in the year B.C. 1490. This period being somewhat antecedent to the anti-vaccination movement, the statement of the above historical fact disposes of any pretensions to originality which may be advanced. It will thus be seen that so far only those ordinary measures are put in force which are adopted by all careful sanitary authorities; there is, in fact, nothing original in the means employed.

The essential point in which the Leicester system differs from all other systems consists in the claim which is put forth by its advocates with tireless reiteration, that the sanitary measures I have named are sufficient to stamp out any outbreak of small-pox which may arise without recourse to vaccination.

To again quote Mr. Biggs from the article named above: "Vaccination has rapidly declined in the borough, now being only about 2 per cent. of the births, and small-pox mortality has disappeared from our midst." No comment is necessary, except to state the simple fact that since Sept. 7th, 1892, 132 cases of small-pox have occurred and ten persons have died in Leicester of that disease. If we were disposed to consider in a serious light the extravagant pretensions which are claimed for the success of the Leicester method by certain misguided enthusiasts we might almost be persuaded that we had reached a state of sanitary perfection. It is true that large sums have been spent—and very properly spent—in putting Leicester into a good sanitary condition, and the highest praise is due to the town authorities for their excellent results in this direction. The immense outlay has already been rewarded by an improved state of the public health, and the lowering of the death-rate is in a great measure due to this wise expenditure. It will, however, scarcely be credited that the decreased death-rate from all causes is not attributed to the true reason named above, but, practically, to the abandonment of primary vaccination. We have been accustomed to hear these loud-voiced laudations of the Leicester system cried from the housetops during those times when the town has fortunately been free from small-pox, but the tune is now pitched in a minor key, as public opinion is awakening to the fact that on this first occasion on which the system has been fairly tested it has been tried and found wanting. It would naturally be inferred by outsiders that the means employed are perfect in their character and the organisation used unrivalled in its method; that we have reached a degree of excellence which places Leicester above all other towns in its special mode of dealing with small-pox isolation and quarantine; that in our capacity as "superior persons" we wish to demonstrate to the world how to do it and how not to do it; and, lastly, to show that these wondrous results are gained because we have a free hand, unfettered by "medical interference and prejudice," and that our success is reached without any resort to that "medical superstition"—vaccination.

PROVISION FOR ISOLATION IN LEICESTER.

The Leicester Fever Hospital was constructed in an emergency for the reception of small-pox cases, and so long as it was reserved for that end it fulfilled a useful purpose. With the disappearance of the small-pox epidemic of 1871–72 it gradually became a hospital for infectious diseases generally. For many years it has been chiefly used for the reception of scarlet fever cases, the three principal wards being devoted to this purpose. These wards open into a common corridor, possess each a small side room, and on the opposite side of the corridor, and also opening into it, are the various rooms connected with the administrative department. At the western extremity of the main building, and at right angles to it, is the small-pox block. The end of this block is within ten feet of the main building, and this fact is sufficient to condemn the hospital from the point of view of isolation. At the eastern end of the hospital site is a block known as the "erysipelas ward," so called because it scarcely ever contains an erysipelas patient. This ward in its time has played many parts, and at the period when small-pox appeared in the fever wards was full of convalescent scarlet fever cases. These children were then sent to their homes, and the erysipelas or convalescent fever ward was at once transformed into a quarantine building, forming the next stage in the "object lesson" which we are invited to admire. It will thus be seen that when small-pox broke out in the overcrowded fever wards, with the exception of the small side rooms which form an integral portion of, and communicate directly with, the large wards, there was not in the whole hospital a single room which could be appropriated to the observation of a doubtful case.

NURSES' ACCOMMODATION.

During the course of the present outbreak of small-pox one of Humphreys' buildings has been erected for the separate use of nurses engaged in the small-pox ward. Up to this time the nurses engaged in this duty were compelled to sleep and take their meals in the same building in which the patients were placed. Owing to lack of accommodation on the premises certain officials of the institution have been accustomed to sleep at their homes in the town, thus constituting a serious danger to the public safety. One of these (a laundrywoman) was actually attacked with small-pox and admitted to the Small-pox Hospital as a patient, where, I regret to say, she afterwards succumbed to the disease. Is it not a sad reflection on the "Leicester system" of isolation and quarantine that such laxity of arrangements is permitted to prevail in respect of the hospital attendants, whilst at the same time insisting upon the necessity of quarantine so far as private individuals are concerned?

QUARANTINE ARRANGEMENTS.

Two small rooms directly communicating with each other and with a passage in the main building are known as the "old quarantine." These rooms are in close contiguity to the fever wards and are not far removed from the small-pox block. So long as we have had only an odd case or two of small-pox to deal with these rooms have sufficed for the object in view and have formed the mainstay of our system of quarantine. It is hardly necessary to point out that the position of these rooms has been a source of continual danger to their inmates. The large erysipelas (!) ward is now used for quarantine purposes and is as cheerless a habitation as can well be imagined. In this building live the persons who have consented to do their "fourteen days'" observation. I must here acknowledge that these people are treated with every consideration so far as is compatible with deprivation of liberty, and that they are supplied with all the necessaries of life in the form of good food, together with some of its luxuries in the shape of tobacco and beer. On Oct. 31st, 1892, the hospital was more than full, containing 158 patients suffering from scarlet fever. Of this number 84 were vaccinated, including those vaccinated by the medical officer of health. Of these 84 vaccinated children not one contracted small-pox. The remaining 74 were unvaccinated; 13 of these contracted small-pox and 4 died. Small-pox having broken out amongst these children it became necessary to send the remaining scarlet fever cases to their own homes, where they were kept under observation, and some of them were readmitted to the hospital suffering from small-pox.

The recital of a few prominent facts regarding quarantine will be sufficient to show that it is not so rigorous as is represented, that it is, indeed, of the most elastic character. It consists of at least four varieties: 1. Small-pox patient removed to hospital and all inmates of house to quarantine. 2. Patient removed but other inmates left at home, "compensation" being awarded to induce these persons to keep from work. 3. Patients from public institutions—e.g., infirmary, workhouse and also from common lodging-houses—are removed to hospital, and the other inmates are daily inspected to see how they are "getting on." 4. Patients not removed to hospital and other inmates not removed to quarantine. During the present outbreak, so far as it has gone, 205 persons have been quarantined at the hospital, whilst 723 have been watched at their own houses or at workhouses, or in common lodging-houses. The contrast between these figures is most significant, and is largely due to the fact that small-pox broke out in public institutions and lodging-houses, the inmates of which it was clearly impossible to quarantine at the hospital. Quarantine being a voluntary act, "part of the life of a free people," in October we met with the first refusal in the case of a person who absolutely declined to enter hospital quarantine and as firmly declined

to be revaccinated. This person fell ill with the disease in due course and was admitted to hospital. It is incorrect to say that quarantine is carried out without recourse to vaccination and revaccination. True, vaccination is not put into practice as it ought to be, and much which should be done in this direction remains undone, to the continued peril of the public safety.

COMPENSATION OR NO COMPENSATION?

In the article of Mr. Biggs referred to above, he says: "Another baseless assumption that is frequently used for the purpose of discrediting us is that this Leicester method of isolation, quarantine, disinfection and sanitation is so excessively expensive as to be practically prohibitive. Now, I can show, on the contrary, that our Leicester method is extremely economical as well as effective. Besides, it is now well known that, however thoroughly a community is vaccinated, so little reliance is placed upon this supposed safeguard that on the outbreak of small-pox recourse is at once had to the very measures which have been so persistently decried when used to the salvation of unvaccinated Leicester. Comment from me is unnecessary, further than to say that compensation for loss of time is not offered; but if, as a precautionary measure, bedding or clothing have to be destroyed, their value is made good." When the "little bill" for compensation for loss of time and for carrying out the other details of the Leicester system is produced it will present a sufficient commentary on this statement. The heavy expenses already incurred may afford an instructive object lesson to all students of sanitation, but will bring small comfort to the already overburdened ratepayers of Leicester. It is not long since one of these so-called "quarantine" persons walked into the presence of the sanitary committee (to the consternation of some of the members) to complain of the £1 a week awarded him as being insufficient, and, like Oliver Twist, he had called to "ask for more."

In face of these facts I ask, "What has become of the Leicester system?" The present hospital and its quarantine arrangements are utterly inadequate and have failed in their professed purpose, as has been pointed out again and again in THE LANCET. The hospital cannot be regarded as an isolation hospital at all, for with the first small outbreak of small-pox it is necessary, *nolens volens*, to clear out all the fever cases. To-day no cases are admitted excepting those of small-pox, and the quarantine at the hospital is actually empty. The majority of persons who have been exposed to contagion are now subjected to a process of surveillance at their own homes, and in this way it is proved that this so-called "system" is nothing short of lack of system. The fact is self-evident to every unbiased mind that we have been living in a fool's paradise, and that an outbreak of small-pox of moderate dimensions has been sufficient to prove that Leicester, so far as hospital accommodation and provision for isolation and quarantine are concerned, was ill-prepared to cope with the disease. In fact, Leicester at the time of the outbreak of small-pox was probably as little prepared to meet it as any other large town. Our recent experiences may perhaps teach us a useful lesson, and when we have provided that hospital accommodation for infectious disease of which we stand so sorely in need; when we have supplied means of isolation and quarantine in practice and not in theory; when we have adopted vaccination and revaccination as our first line of defence—then, and then only, shall we be able to claim that the "Leicester system" is a method worthy of imitation and not a fantastic phrase which means nothing.

CHOLERA.

RUSSIA has of all countries suffered most severely from the epidemic. Its geographical position led to its being earliest attacked and the epidemic has continued, more or less, with varying degrees of intensity, up to the present time. During the latter half of February 305 cases of cholera with 59 deaths occurred in the province of Podolia, and according to the latest reports from St. Petersburg, the disease is said to be spreading over Central Russia. The peasants are, it is stated, dying by thousands, and the greatest distress prevails throughout the whole region. The governments most severely visited by the epidemic are Astrachan, Ekaterinoslav and Moscow. Isolated cases of cholera have also occurred during the present month in the towns of Nijni-Novgorod, Oreland, Yaroslav and in the province of Kieff. In view of the possible outbreak of cholera in the Trans-Caspian Province it has been decided, as a precautionary measure, to establish a sanitary cordon on the frontier of Khorassan and Afghanistan. Moreover, the Minister of Ways and Communications is about to make a sanitary inspection of all the Russian railways. A congress of sanitary officers will meet at St. Petersburg shortly to consider the measures to be taken in the event of a general reappearance of cholera this spring and in the coming summer.

From L'Orient (Brittany) we learn that many cases of cholera have appeared during the present month. Six deaths occurred in eight days among patients presenting choleraic symptoms, and on the 16th inst. it was stated that four fresh cases had occurred.

In connexion with these facts it is interesting to note that frequently the earliest indications of an epidemic spread of cholera in India outside its endemic area are the occurrence of sporadic cases in various places or localised outbreaks on a small scale in March and April, and the disease has been named in consequence spring cholera, to denote the season of its prevalence.

As regards the proceedings of the International Sanitary Conference, it is believed that these have been confined to the discussion of general questions. According to the special correspondent of *The Times*, there is a general impression that the delegates from the greater number of the Powers concerned will endeavour to remove or minimise, as far as practicable, restrictions on traffic and commerce, and that their efforts in this direction will be supported by the delegates from this country and aided by the influence of some of the scientific experts from Germany and the Continent in general.

THE PROPOSED MEDICAL SCHOOL AT CARDIFF.

ANOTHER step forward has been taken by the Council of the University College of South Wales and Monmouthshire towards the establishment of the projected School of Medicine at Cardiff in connexion with the College. Last week Dr. A. W. Hughes was appointed Professor of Anatomy and Dr. J. Berry Haycraft Professor of Physiology, and it is expected that the formal opening of the school will take place in October next. Both these gentlemen are well known as teachers and investigators in their respective subjects, and, having already had considerable experience in the teaching and the organising of teaching in medical schools, will considerably strengthen the scientific branches of the professoriate of the University. We congratulate South Wales on obtaining the services of such well-trained professors for their new chairs; but we cannot avoid pointing out that salaries of £350 per annum, without a share of the fees paid by their students, are quite insufficient to retain their services for any period of time should they be offered similar chairs in other medical schools. Cardiff boasts of its goodly list of scientific institutions; but it will scarcely urge that its liberality in endowing professorial chairs is also a feature of which it may be justly proud. The University College of South Wales has been very successful in passing its students at the Preliminary Scientific M.B. Examination at the University of London, and this new departure will enable it to teach students for the intermediate M.B. examination and for the second examination of the Conjoint Board for England and for the corresponding scientific examinations of the other licensing authorities. We have no doubt that all this work can be well done at provincial centres of education, provided the teachers and the material are forthcoming, as they should be at a place of the size, position and importance of Cardiff. It is just possible that there may be some difficulty with regard to the practical instruction in anatomy, but this will mainly depend on the size to which the proposed school will ultimately attain. In addition to the more strictly scientific part of the curriculum,

it is also proposed to give a certain amount of clinical teaching and practical work to students at the Cardiff Infirmary, and to provide systematic courses of lectures in such advanced subjects as obstetric medicine and in medical jurisprudence, thus aiming at a complete medical education, both theoretical and clinical, and on a practical as well as on a merely scientific basis. The training is to be a thorough one, and the idea of the founders of the medical school is obviously to keep the student mainly, if not exclusively, in Cardiff. Early scientific education can be effectively and advantageously carried out in the provincial colleges, but a complete medical training in the practical branches of our art can only be obtained in the very largest centres of population. Clinical material of sufficient variety and clinical teachers of the first eminence can seldom be found together in provincial cities or towns; and even if the latter exist there they will always be under a temptation to move to larger areas. Medical science and art cannot be provincial without having the tendency to become unduly narrowed.

THE GENERAL COUNCIL OF THE EDINBURGH UNIVERSITY AND THE COMMISSIONERS' DRAFT FINANCIAL ORDINANCES.

A SPECIAL MEETING of the General Council of the University of Edinburgh was held last week and was summoned mainly to receive and consider the report of the Committee on Ordinances, more especially on the draft financial ordinances issued by the Commission. The report deals, in the first place, with the proposed scheme, pointing out that it is intended that the class fees, instead of being paid to the professors directly, are to be paid to an official of the University Court and are to go to a fee fund. Each professor is to receive, firstly, the endowment on the Parliamentary grants attached to his chair and, secondly, a sum from the fee fund sufficient to bring up his salary to the "normal salary," which is fixed by the Commissioners in each case. The normal salaries are to vary from £500 to £1400 a year. This so-called "normal salary," the report points out, is really the maximum salary, as no provision is made for an increase beyond this. There is, on the other hand, provision that the emoluments from a chair shall not fall below what is called the "minimum salary." In so far as the salary may exceed the minimum rate, the only guarantee is the fee fund, and the "normal salary" can only be attained if the fee fund is able to meet all the calls made upon it. The report takes up, firstly, the fee fund, and cordially approves of the general principle underlying it; but the committee have had to consider whether the fees of students should be collected into a separate fee fund for each faculty or go into a common fund, and on this important point the committee does not come to a decision, considering it could hardly do so without more knowledge as to the provision the Commission proposes to make for the payment of lecturers &c. Taking up, then, the question of minimum salaries, the committee approves of the principle that a minimum salary be guaranteed, but it highly disapproves of a separate minimum for each chair. The reason for opposing this is that a professor's status is not affected by the subject he teaches or by the number of classes he teaches, neither ought his guaranteed minimum salary to vary with these conditions. A varying or graduated minimum seems wrong in principle. The minimum ought to be as high as the University can afford, but it ought to be the same for all. The committee considers that the irreducible minimum ought to be £500 a year. The proposal to which the committee object most emphatically in principle is that of a fixed maximum salary, called by the Ordinance a "normal salary." Quoting from the report by the University Commission of 1878, as follows: "It is desirable, if possible, to give every professor the incentive to exertion which the dependence of a portion of his income on the success of his teaching and the number of his students gives," the committee adhere to the principle expressed therein. The Commission, instead of modifying or regulating the stimulus of material success as was desirable, has proposed to abolish it altogether, and the committee regard this as a serious and fatal mistake. The report says: "As long as human nature is what it is, men, even learned men, will be incited to exertion by a regard for their own interests as well as by other legitimate motives. Scottish professors have not shown themselves to be more insensible to that influence in the past than other men." If this plan be adopted, "every professor will be invited to realise the fact that his most assiduous exertions and most brilliant efforts, though they may double the number of his students, will add nothing directly to his own income; and, on the other hand, that his income will suffer no appreciable diminution even after he has emptied his classroom by the laziest reading of the dullest lectures." It is pointed out by the committee that the Senatus have recommended that after receiving the minimum each professor should receive all his fees until a second fixed point is reached, after which he should receive one-third of his fees, the remaining two-thirds going to the common fund. Another scheme that has been proposed is that after the minimum salary is paid the surplus should be divided into three parts—one to go to the professor, one to his faculty, and one to the University. The committee does not commit itself to either of these, but it appears to think either of them better than that proposed by the Commission. As for the question as to whether or not there ought to be a superior limit and a maximum salary, the committee think that the maximum is determinable by consideration of the number of students a professor is competent to teach and to examine in each class, and that the University Court should be called upon to fix it in each case upon this principle. On the matter of vested interests the committee point out various faults in the Ordinance, and they hold that in all future appointments to chairs in medicine the University Court should have liberty to revise the conditions of each chair. The objections to the Ordinance are summarised as follows:—1. The proposal of separate minimum salaries for each chair cannot be justified in principle, whilst it would prove invidious in practice. 2. The withdrawal from the professors of all direct interest in the success of their classes is an unnecessary interference with the natural incentives to energy and enterprise. 3. The limitation of salaries to a rigid normal or maximum, differing for each chair, is an artificial arrangement, calling for a constant readjustment in the future to changing conditions, a readjustment which is not provided for. 4. The proposed relations of the different faculties in regard to the fee fund would interfere with harmonious working in the Senatus and might lead to serious injustice.

The main amendments proposed are:—1. There should be a uniform minimum salary of £500 a year guaranteed to each chair. 2. Each professor should retain a certain interest in the fees paid for his class. 3. The upward limit of salary should be determined by decisions of the University Court fixing the extreme number of students to be taught in a single class.

The adoption of this report was moved by Mr. TAYLOR INNES, Advocate, and seconded by Mr. SCOTT DALGLEISH, LL.D., and unanimously agreed to.

The report of the Finance Committee was then submitted. It criticises very severely the proposed financial arrangements by the Commission. It states that the committee doubt the wisdom of the Commissioners' plan of attempting to find salaries for the non-medical chairs out of fees earned in the medical faculty. These fees, it is stated, are liable to violent fluctuations, and it is suggested that the Commissioners have been induced too readily to draw for general purposes upon the medical fees in consequence of the attitude of the medical professors who represented to the Commissioners that additional chairs were not wanted in the medical faculty. How far this view is correct the report does not inquire, but it says that it is certain that a large body of non-professorial medical opinion is satisfied that greatly increased teaching power and appliances are absolutely necessary if the Medical School is to hold its own in competition with newer institutions. The report further states that the committee was favoured with a memorial which contains the fees for 1891–92, that the shrinkage there shown greatly exceeds the committee's estimate, and that the figures given by the Medical Faculty prove that without any further shrinkage in the current or future years the Commissioners' surplus of £8225 from the medical chairs has fallen below £2500. This report was also unanimously agreed to.

IRISH MEDICAL SCHOOLS' AND GRADUATES' ASSOCIATION.

THE annual meeting of this Association was held on St. Patrick's Day, March 17th, at the Medical Society's rooms, Chandos-street. The chair was taken by Sir Thomas Crawford, K.C.B. Special interest attached to the occasion, as the Association was honoured with the presence of Professor Virchow of Berlin, who had responded to the desire of the council to elect him as an honorary member.

Sir THOMAS CRAWFORD said the honour of introducing Professor Virchow to the Society had unexpectedly fallen upon himself in the absence of their senior Vice-President, Dr. Macnaughton Jones. Professor Virchow had already received a hearty and cordial reception from the members of the profession in London, but, although they were a smaller body, in no portion of the medical society of London could he be more warmly appreciated or more heartily esteemed than he was in the Irish Graduates' Association. Addressing Professor Virchow, Sir Thomas Crawford said he had great pleasure in being enabled to enrol his name as an honorary member of the Association, and also in re-echoing what was so ably said at the Hôtel Métropole banquet as to the manner in which his distinguished services to the profession had been appreciated, not only in his own country, but also throughout the whole civilised world.

Professor VIRCHOW expressed his gratification at meeting such an honoured body of graduates from the Green Isle. It had long been his wish to visit that country, but it had been hitherto impossible for him to accept the invitations he had received from Dublin. He hoped they would accept his hearty thanks for the reception they had accorded him and convey his good wishes to their *confrères*. He spoke of the esteem with which the degrees conferred by Trinity College were regarded in Germany and of the high reputation borne by the Irish medical schools. Professor Virchow then inscribed his name on the roll of members.

The CHAIRMAN said the Association had also had the privilege of enrolling Sir James Paget as one of its honorary members. Sir James Paget was not an Irish graduate in the Irish sense of the term, but he was a graduate of every college and university which respected itself, and, like Professor Virchow, he enjoyed the honour of the world at large.

Professor Virchow then left amidst renewed demonstrations of applause.

The minutes of the previous annual meeting having been confirmed,

Dr. CAGNEY (hon. sec.) read the sixteenth annual report, which stated that the present total strength of the Association was 701. It was now the second largest association of medical men in the English dominions, and, consisting entirely of Irishmen or of those who had the interests of Irishmen at heart, it should have great weight in deciding the course of events which bore directly upon the reputation of the Irish schools and upon the fortunes of Irish practitioners at home and abroad. This reputation and these fortunes had become the special care of the Association. The exclusion of Irish and Scotch diplomats from honorary appointments on the staff of certain English hospitals was referred to, and the Association was resolved to spare no pains to procure the abolition of the anomaly. An attempt had also been made to induce the medical authorities of the chief London hospitals to reconsider their policy, and the council was not without hope that they might in time come to hold the more liberal view which experience had shown to be that generally taken by the charitable public whom they represented. It had been ascertained further that Guy's and University College Hospitals, as well as St. Mary's Hospital, repudiated the necessity for restriction of any kind. On the other hand, there was one hospital at which the highest degrees of the Irish and Scotch Universities were expressly rejected and an English degree was required, as well as an English diploma, from candidates who sought an appointment upon its staff.

Dr. MAPOTHER moved the adoption of the report, which was seconded by Dr. W. H. BOURKE and agreed to.

On the motion of Dr. MAPOTHER, seconded by Dr. WELLS, it was agreed to elect Dr. Richard Heath as president-elect for the forthcoming year.

Sir Thomas Crawford, Dr. Macnaughton Jones, Professor McAlister and Dr. Fegan were elected as vice-presidents, after which the usual votes of thanks were passed.

The following members were elected as the council for 1893-94:—Dr. P. S. Abraham, Dr. W. A. Carte, Dr. J. Davison, Mr. P. C. Hayes, Mr. C. H. Hartt, Mr. J. J. Lough, Dr. H. H. E. Phillips, Dr. F. J. A. Waring, Mr. W. D. Waterhouse, Dr. W. H. White, Dr. W. Barter, Mr. W. Stoker, Dr. T. M. Dolan, Mr. G. Stoker, and Mr. R. J. Swan.

The annual dinner of the Association took place the same evening at the Holborn Restaurant. Sir T. Crawford, K.C.B. (in the chair), was supported by Sir Walter Foster, M.P., Sir William MacCormac, Dr. Gilbart Smith, Dr. Mapother and others; and the guests included the Dean of Norwich, Professor Clifford Allbutt, Dr. Ferrier, F.R.S., Mr. MacKellar and others. The usual loyal toasts having been given, the Dean of Norwich spoke for the visitors. Dr. Ferrier proposed the "Health of the Association," and Dr. Crawford Hayes that of the "Universities and Corporations," to which Professor Clifford Allbutt replied. An excellent programme of music, to which Mr. J. G. Robertson and Mr. Cheesewright contributed, added to the success of the evening.

THE SEVENTH INTERNATIONAL CONGRESS OF HYGIENE AND DEMOGRAPHY.

THE Transactions of this Congress are now being distributed by Messrs. Eyre and Spottiswoode, who have acted as its printers and publishers. The time which has elapsed since the close of the Congress (August, 1891) is considerable, but no one who is acquainted with the difficulties and delays necessarily involved in dealing with manuscripts in foreign languages and in transmitting proofs to almost all parts of the world will feel inclined to seriously complain of any delay in issuing these thirteen volumes, extending collectively to something like 3400 pages and amounting in the mass to more than fourteen tons of printed matter. The Transactions are considerably more bulky than those of any of the previous Congresses, and as each section has a volume to itself it is easy to find those matters in which the render may have a special interest. Dr. Shelly of Hertford, who has acted as Editor for the Congress, is certainly to be congratulated upon the successful termination of his heavy labours. Each volume has a good index; and in the final volume (Miscellanea, vol. xiii.) will be found not only an index of authors but the index of each of the other volumes as well, so that to find any particular paper or discussion it is only necessary to take one volume from the shelf. The volume devoted to Miscellanea contains, in addition to indices, the list of members and delegates (British, foreign and colonial), the names of the institutions, municipalities &c. which sent delegates to the Congress, the list of donors, and also complete lists of all the officials. There is a short report by Sir Douglas Galton, and a longer and more detailed report which is signed by Dr. Corfield, the honorary foreign secretary, and Dr. Poore, the honorary secretary-general, who were also honorary secretaries to the Organising Committee. This report contains many statements which tend to show the magnitude of the Congress. For instance, we find the following which may be quoted:

"As regards the numerical strength of the Congress, the following facts may prove of interest: First, as regards the delegates, it will be found that 316 municipal, learned and philanthropic bodies in the British Islands appointed 686 delegates, 39 bodies in India and Ceylon appointed 67 delegates, and 19 bodies in the British colonies appointed 27 delegates. This gives a total of 780 delegates, appointed by 364 bodies in the British Empire. In addition to this, 25 Governments and 197 municipal and other bodies in foreign countries appointed 352 delegates, so that we have a total of 1132 delegates appointed by 586 Governments, corporate bodies, and associations throughout the world. The numbers of the delegates appointed by various bodies in foreign countries were as follows: Governments and Government departments, 144; cities, corporations, and provincial councils of health, 108; medical and other professional and scientific societies, 73; universities, colleges and faculties of medicine, 55; hygienic societies, 40; and other bodies, 6. The same delegate was frequently appointed to represent more than one body. Many of those persons who were appointed delegates were unable, from various causes, to attend the Congress; but, on the other hand, a very large number of persons interested in hygiene and demography

became members of the Congress on their own initiative. There were altogether 2483 full members of the Congress, of whom 1887 were inhabitants of Great Britain, 58 inhabitants of India and the colonies and 538 inhabitants of foreign countries. In addition to the 2483 full members of the Congress there were some 400 lady members and about 200 representatives of the press, both British and foreign, to whom complimentary tickets were accorded. Thus, the total number of our guests during the Congress week exceeded 3000.

"The success of the Congress has been very largely due to the division of labour and the zeal with which each department was worked; but as the organisation of the parts became more perfect the work in the central office became steadily more arduous, until at last the mere labour of opening letters and ordering the correspondence occupied several hours daily. During the session of the Congress the paid and honorary staff amounted to more than 100 persons, and some idea of the work involved by the organisation may be gathered from the statement that 195,250 circulars, 110,310 programmes, and 20,000 invitation cards and programmes were disseminated, whilst the general correspondence took over 22,000 sheets of note paper and correspondence cards."

LOCAL CONTROL OVER DRAINAGE.

WE had occasion in our issue of March 18th to comment upon a letter, which appeared in the *Builder* for Nov. 5th, 1892, from Mr. Arthur Baker, F.R.I.B.A., on the subject of the control exercised by local authorities over drainage and sanitary work. Since then we have received from Mr. Baker a further communication, in which his views on the matter have been more fully laid before us. After dwelling upon the great advances that have been made in recent years in sanitary science, Mr. Baker compares the actual progress we have made in practical house sanitation with the amount of knowledge we possess upon the subject, and is constrained to admit how great indeed is the difference between theory and practice. With respect to the generally insanitary condition of house property, Mr. Baker quotes the opinions of two medical officers of health—one of a fashionable West-end parish and the other of a poorer district—in which the former states that he does not believe that a dozen houses could be found in any street in a satisfactory sanitary condition, and the latter that a dozen houses constructed according to the standard of modern sanitary science could not be found in the whole parish. Likewise to the point is the case instanced by the writer of a client who searched in vain for a house at the annual rental of £55 in which the drainage had been planned according to the most advanced ideas of sanitary engineers, and who, in despair, was in the end obliged to pay the money out of his own pocket to attain his ambitious ideal. In casting about for the reasons of these shortcomings Mr. Baker eventually reduces them to two—(*a*) The defective provisions in the Public Health Acts relating to the qualifications of sanitary officers; (*b*) the absence of uniformity in the codes of bylaws adopted by local authorities.

In commenting upon the qualifications necessary for the post of medical officer of health, Mr. Baker says: "Of the value of the diploma as showing a complete knowledge of physics, chemistry, analysis of air and water, the laws of heat, pneumatics, hydrostatics, the disposal of sewage and statistical methods, I cannot pretend to judge; but, as regards house drainage and sanitation, I venture to think that the test is neither sufficient nor satisfactory. In the examination by the Royal College of Physicians and Surgeons only three questions out of fifty-five, and those of the most elementary kind, relate to this subject, and in the Cambridge University examination I only find two questions out of twenty-seven." Our correspondent has also very little hope that the knowledge upon which such slight stress is placed by examining bodies can with any certainty be acquired by the six months' practical training with a medical officer of health, for he says: "If the unfortunate candidate falls into the hands of such medical officers as I have known, who either think that a stinking drain is both natural and harmless or that a longhopper is a sanitary apparatus, or is ignorant of the danger to health likely to arise from the use of certain forms of grease traps, the syphonage of traps from want of proper ventilation of soil and waste pipes, and the imperfect execution of other details, he will become a medium for the dissemination and perpetuation of sanitary heresy." Equally poor is the opinion entertained by Mr. Baker of the knowledge of sanitary surveyors, for he believes that these officials may be and are most frequently appointed without any test of knowledge of house sanitation being imposed.

We venture to think that Mr. Baker's views are somewhat pessimistic regarding the education of medical officers of health. The fact that the questions set at the written examination for the diplomas of Public Health held by the Royal Colleges of Surgeons and Physicians and the University of Cambridge, respectively, contain so few questions on house sanitation cannot be advanced as an argument in support of the contention of the slight importance in which the subject is held by the examiners. These tests consist not only of a written but also of a practical portion, and Mr. Baker may rest assured that a subject of such first-rate importance in the future work of the candidates always receives its due share of attention at the hands of the examiners. We are also in a position to state that the subject of house-drainage is one which is attended to with scrupulous care in the preparation of candidates for the public health diplomas and that practical demonstrations of apparatus and house drainage are repeatedly given to students. As regards the appointment of sanitary inspectors, any local authority not caring to insist upon a sanitary qualification would at present be quite within its rights; but on and after Jan. 1st, 1895, it will be necessary for candidates appointed to such posts either to be the holders of a certificate granted by a body recognised by the Local Government Board or to have had three years' experience prior to 1895 in some London district with a population of not less than 20,000 inhabitants. Whilst we must insist that the tests which medical men are subjected to before a diploma in sanitary science can be obtained are sufficient, we cannot deny that the amount of house inspection personally carried out by the medical officers of health of London is far too small. The reasons for this are no doubt complex, but we believe that one of the chief reasons will be found in the fact that the medical officer of health is not required to devote the whole of his time to his sanitary duties. Indeed, the pitiful salaries so frequently offered by local authorities to their public health officials successfully prevent men from giving themselves completely up to the work, however inclined they may be to do so.

As regards uniformity in the codes of by-laws adopted by sanitary authorities, we do not see how this could be effected save by legislation. Could the adoption of the model by-laws of the Local Government Board, enlarged and extended, be enforced throughout the country, no doubt a great impetus would be given to house sanitation.

BRITISH GUIANA MEDICAL ASSOCIATION.

THE quarterly general meeting of this Association was held on Jan. 26th. Dr. Robert Grieve, Surgeon-General and President of the Association, was in the chair, and the members present were Messrs. Wallbridge, Williams, Rowland (secretary), Gomes, Hill, von Winckler, Teixeira, Conyers, Rohlehr, Ozzard, Boase, McAdam, Egan, Irving, Law, Castor and Bezbaroa.

The chairman gave a satisfactory statement of the progress of the Society. The secretary read a communication from the British Institute of Preventive Medicine, asking for assistance towards the endowment of a central institution, after which the President delivered an interesting address on the Progress of Medicine during the present century. Sketching in an instructive manner the history of the growth and change of opinion with regard to the essential nature of pneumonia, from the days of Cullen to the present time, and taking smallpox as the type of specific disease, he dealt at greater length with the germ theory of disease, and paid an eloquent tribute to the services of Pasteur in this great and important field of scientific investigation. To Pasteur, he said, we owed the first practical idea of the production of disease by bacteria, an idea which in the hands of the distinguished writers who followed him had given us antiseptic surgery and all that had been rendered possible by its means. To this idea and its fructification was owing the conversion of maternity hospitals from places entry into which placed the woman's life in imminent jeopardy into places whose salubrity equalled

that of the best regulated private dwelling. Preventive medicine, as applied to communities, could also claim to have gained by bacteriology, as was last year shown clearly enough in connexion with the dreaded cholera. Pasteurism could also claim to have already originated cures for some diseases, and the promise for the future was in this direction exceedingly rich. Bacteriology had, moreover, given us the knowledge not only of the minute organisms themselves as exciters of disease, but also of their action through the toxic substances they produced. In view of all this, would it be too much to describe Pasteur's first discoveries as epoch-making and to give to him a place only second to Darwin in the history of the science of the past thirty years? "But it may be asked," Dr. Grieve continued, "what have we as practitioners specially to do with these matters which are apparently mainly questions of science? It is true that to very few of us is given the opportunity of developing into skilled bacteriologists, but it is open to us all to be to a greater or less extent skilled clinicians. This being the case, it is possible to utilise the knowledge provided for us by the bacteriologist and in some cases, it is to be hoped, to add to it. If the scientific laboratory is not at our command, the huge laboratory of nature is at all times carrying on its operations under our eyes, if independently of our actions, and after all it is in this laboratory that the facts of bacteriology, as facts in all branches of scientific medicine, must receive their final confirmation. Now the local circumstances render the conditions under which these natural experiments are carried on more simple and more easily followed than they are in a European community. Here the population is in great part sparsely scattered over a considerable space and lives under the most simple conditions. The course of disease and its origin are therefore more easily traced than they are in huge collections of people with complex surroundings." "It was," said Dr. Grieve, "with the hope of exciting a deeper interest in this study that the subject of this year's address had been chosen."

VICTORIÆ REGINÆ ET IMPERATRICI FLORENTIA.

S. P. D.

BRITANNA regum filia, sunt tibi
Flores et omnis copia narium,
Quoscumque de villis odores
Aura rapit zephyri jocosa,

Jamdudum apud me. Rumpe, precor, moras,
Caliginoso sub Jove frigidam
Urbem relinquas et fruare
Deliciis tibi destinatis.

"Regina salve! grata redis!" sonat
Natura multis vocibus; in tui
Surgunt honorem nunc fluenta,
Nunc juga de nivibus renata.

Te dulce, primo vere tepentius,
Cœlum salutat; te nemus uvidum
Auro renidens et smaragdo
Lumine sub trepidante Phœbi.

Te siqua ramo cantat avis suo
Invitat almam; quin et Oreades
Faunique conjunctis chorcis
Te celebrant propriumque nomen.

En noster Arnus, nec Tamesi invidens
Aucto ampliores agmine vortices
Volvit coercentesque ripas
Vix patitur dominosque pontes,

Ut hospitali dicat Etruriæ
Qualis propinquet femina, cui suam
Recludat Urbem, qua recepta
Non semel edat "Io triumphe!"

Natura nec te sola, sed Ars vocat
Tuscas ad oras, seu tibi dædala
Pictura, seu sublimis Ædes,
Sive placent animosa signa.

Cur invidendas tot referam domos
Musis sacratas, unde politior
Mundus voluptates serenas
Haurit et in meliora tendit?

Cur in Poeta commorer Inferas
Visente sedes, Virgilio duce,
Ignemque Purgantem, et beatas
Quotquot habet Paradisus arces?

Me Pallas olim matribus addidit
Scientiarum, me propriam colit,
Me nutrit ut fiant Etrusca
Ambiguæ regione Athenæ.

Digneris ergo, nobilis hospita,
Paulum morari collibus in meis,
Rerumque laxatis habenis
Sollicitam recreare mentem,

Donec novatis viribus Insulas
Revisis Anglas, consulere aptior
Quid causa communis requirat,
Quid populo tenuet labores.

Christo minorem te Domino gere,
Augusta Princeps, cui datur imperi
Porrecta majestas ad ortum
Solis ab Hesperio cubili,

Sic tuta regnes, sic tibi prospere
Conata cedant omnia, sic pia
Reddare cœlo, sic Britannis
Culta colendaque sis per ævum.

J. P. STEELE, M.D.EDIN.

Florentiæ, in Die S. Patricii, M.D.CCCXCIII.

Public Health and Poor Law.

LOCAL GOVERNMENT DEPARTMENT.

REPORTS OF MEDICAL OFFICERS OF HEALTH.

River Tyne Port Sanitary District.—Dr. Armstrong has issued a very complete report in reference to his district. It shows evidence of considerable vigilance and activity, and cholera certainly ought to find some difficulty in breaking through the Tyne defences. Owing to the delay arising from the medical officers, when examining ships, being carried far up the river above the boarding station, the Tyne Pilotage Commission gave orders that all vessels which required to be medically examined were to be slowed on passing the hailing station. Detention at the mooring station was only practised in the cases of vessels having possibly infected water ballast or bilge water, which it was necessary to pump out before docking. Dr. Armstrong draws the attention of the authority to two sources of danger against which it is important to provide—viz., infected ballast and infected cargoes or holds. He states that "the means of dealing with ballast of infected fresh water or freshwater sand are not satisfactory; the appliances for disinfecting on a large scale are insufficient." During the year 1892 there were 1485 vessels boarded by the officers of the port sanitary authority on account of their having come directly or indirectly from foreign ports infected, or suspected to be infected, with cholera, fever or small-pox. Three masters of vessels gave false reports as to the health of persons on board. Emigrant vessels have been visited by the inspector on arrival and kept under supervision whilst in port. Some 9852 vessels, including 714 fishing boats, were inspected during the year. 151 structural defects were observed and 149 were remedied on notice. 1085 notices were issued to abate nuisances or remedy sanitary defects. In 524 cases the drinking-water was ordered to be changed and the tanks to be thoroughly cleansed. As Dr. Armstrong observes, it is much to be regretted that port sanitary authorities possess no legal power to deal with provisions supplied to seamen which are unfit for food. The only way they can be dealt with is as nuisances under the Public Health Act. The addresses of 3079 persons were taken in accordance with the cholera regulations. Four seamen gave false addresses and were fined £10 each with an alternative of seven days' imprisonment. Sea burial in the case of a corpse dead of cholera was not thought desirable owing to the shallowness of the North Sea and the possibility of the body being dredged up by the trawlers. 135 vessels with freshwater ballast taken in at infected ports were ordered to be pumped out, and the bilges of all vessels from infected ports were

disinfected with perchloride of mercury and pumped out before the ship entered dock. Commenting on the precautions for the future, Dr. Armstrong writes: "The safety of the entire population is jeopardised by every deficiency in preparation on the part of a port sanitary authority short of absolute perfection, and of every act of oversight or neglect, however small, on the part of any responsible port officer of health or inspector in performance of special cholera duties. The machinery and work for the prevention of cholera must therefore of necessity be as efficient and thorough in one port, irrespective of its size or the amount of its trade, as in another; otherwise the services of all the rest may be wrecked." In discussing our port defences, Dr. Armstrong gives it as his opinion that "the best equipment of the kind in this country bears no comparison for completeness with that of the Louisiana State Board of Health at New Orleans."

Teignmouth Urban Sanitary District.—The general death rate for the Teignmouth portion of this district during 1892 was 20·85, that for Shaldon 17·90. An analysis of the large number of deaths recorded in Teignmouth shows that the incidence during the first quarter of the year was much in excess of that in the remaining three-quarters, and this fact seems to point to influenza as being the chief factor in producing this excess. The deaths from cancer were no less than 50 per cent. above the average, and this Dr. Piggott is inclined to attribute, in great part at least, to the large proportion of aged persons amongst the inhabitants. The zymotic death-rate was 0·44 per 1000. There were 19 cases of enteric fever notified in the district, 10 in Teignmouth, with a population of 6886, and 9 in Shaldon with one of only 1285. In Shaldon there are a large number of shallow wells, and we hope before long to hear of these being closed. The Notification Act is said to work very satisfactorily in the district, and the proceedings which follow upon notification seem to be very complete. Dr. Piggott makes (what he calls) his "perennial complaint" as to the existing hospital accommodation. It seems that the only provision for the urban and port districts is of such a character "that the medical practitioners of the district have unanimously pledged themselves not to advise their patients to avail themselves of the indifferent accommodation provided." A local authority which, in face of an expression of an opinion such as this, fails to make proper provision must certainly be regarded as having neglected to fulfil one of the most important duties incumbent upon it. Furthermore it seems that the authority in question has recently deputed the officer who acts as an inspector of nuisances for both the port and urban districts to perform the duties of clerk of the works to a new sea wall in the course of erection. This is indeed taking a novel view of an inspector's functions, and we are glad to see that Dr. Piggott speaks with no uncertain note as to the impropriety of the proceeding. As he states in his report, at a time such as this, when in view of the advent of cholera the inspector's unremitting attention should be given to improving the sanitary condition of the district, the authority has by its action practically decided to relax its efforts. A very interesting account of a recent limited outbreak of diarrhœa in the district is given in the report, and we hope to be able to give a short notice of it in a future issue.

Poole Urban and Port Sanitary Districts.—The estimated population of this district in 1892 was 15,888, and it yielded during the year a general death-rate of 20·70 and a zymotic death-rate of 2·58 per 1000. The infantile mortality amounted to no less than 171 per 1000 births. An extensive and severe epidemic of measles occurred in the autumn, which was accountable for 31 deaths. We notice that out of this number only 2 were in the cases of children under one year of age, so that this epidemic could not have greatly affected directly the high infantile mortality. Influenza caused 26 deaths. The Infectious Diseases Notification Act has just been adopted, and Dr. Lawton again strongly urges his authority to revise the By-laws, which, it seems, are quite out of date. The report does not state what steps were taken with reference to the three samples of well water which were submitted for analysis and found to be impure. We are told that in five instances the disinfection of premises was carried out; but this seems a very small proportion of the large number of infectious cases which occurred. Plans for a new fever hospital were approved four years ago, but there the matter appears to rest. Acting as medical officer of health to the Poole sanitary authority, Dr. Lawton very properly ordered the bilges and water casks of ten vessels which had come from a cholera-infected littoral to be cleaned out previously to the ships being berthed. Some 77 inspections of vessels were made by the medical officer of health and 157 by the assistant sanitary inspector. It would have been of interest had Dr. Lawton given a short account of the port sanitary authority's equipment.

Sutton Coldfield Urban Sanitary District.—This district is one of those in which measles has been added to the list of notifiable diseases; and, as Dr. Bostock Hill remarks, the addition must be regarded rather in the light of an experiment. He is of opinion that the measure in a scattered district, largely rural, is a desirable one. There were during the year under review (1892) no less than 253 cases of measles notified amongst a population estimated at 8950. Of those attacked, as many as 80 per cent. were over five years of age; and, as Dr. Whitelegge has shown that 90 per cent. of the mortality from measles occur in cases under five, this fact may to a large extent account for the death-rate of the 253 cases being *nil*. This high age incidence is explained by Dr. Hill on the grounds that, the disease being notifiable, precautions are taken to prevent its spread, and as a result a somewhat large proportion of unprotected persons has accumulated. If the deduction can be justified by the facts, it is obviously a strong argument in favour of notification. There are, however, many complicated points involved in this question. The zymotic death-rate of the district for 1892 was the lowest yet recorded, being 0·22 per 1000. The general death-rate was but 13·4. Influenza, which prevailed in the district during 1891, seems then to have claimed all its victims, as it was practically absent during 1892. The infantile mortality was 130 per 1000 births, the chief cause of death being respiratory diseases and premature births. Great improvements appear to have taken place in the ventilation and flushing of sewers during the year.

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

In thirty-three of the largest English towns 6488 births and 3931 deaths were registered during the week ending March 18th. The annual rate of mortality in these towns, which had been 20·8 and 19·6 per 1000 in the preceding two weeks, rose again last week to 19·9. In London the rate was 19·1 per 1000, whilst it averaged 20·4 in the thirty-two provincial towns. The lowest rates in these towns were 13·9 in Derby, 14·4 in Croydon, 15·3 in Leicester, and 15·8 in West Ham; the highest rates were 23·7 in Preston, 25·0 in Norwich, 25·2 in Liverpool, 25·5 in Manchester, and 29·3 in Bolton. The 3931 deaths included 406 which were referred to the principal zymotic diseases, against 398 and 350 in the preceding two weeks; of these, 102 resulted from whooping-cough, 91 from diphtheria, 85 from measles, 52 from scarlet fever, 45 from diarrhœa, 23 from "fever" (principally enteric) and 8 from small-pox. No fatal case of any of these diseases occurred last week in Wolverhampton; in the other towns they caused the lowest death-rates in Brighton, Derby, Halifax and Plymouth, and the highest rates in Preston, Cardiff, Manchester, Bolton and Croydon. The greatest mortality from measles occurred in Huddersfield, Hull, Leeds, Croydon and Bolton; from scarlet fever in Gateshead and Bolton; and from whooping-cough in Burnley, Preston and Birmingham. The mortality from "fever" showed no marked excess in any of the large towns. The 91 deaths from diphtheria included 65 in London, 6 in Manchester, 5 in Cardiff and 3 in Birmingham. Three fatal cases of small-pox were registered in London, 2 in West Ham, and 1 each in Bristol, Liverpool and Oldham; 207 cases of this disease were under treatment in the Metropolitan Asylum Hospitals and 8 in the Highgate Small-pox Hospital on Saturday last. The number of scarlet fever patients in the Metropolitan Asylum Hospitals and in the London Fever Hospital at the end of the week was 2065, against 2293, 2210 and 2147 on the preceding three Saturdays; 180 new cases were admitted during the week, against 208 and 195 in the previous two weeks. The deaths referred to diseases of the respiratory organs in London, which had declined from 427 to 351 in the preceding three weeks, further fell to 338 last week, and were as many as 208 below the corrected average. The causes of 62, or 1·6 per cent., of the deaths in the thirty-three towns were not certified either by a registered medical practitioner or by a coroner. All the causes of death were duly certified in Portsmouth, Nottingham, Sunderland, Newcastle-upon-Tyne and in eight other smaller towns; the largest proportions of uncertified deaths

were registered in Brighton, Leicester, Swansea and Huddersfield.

HEALTH OF SCOTCH TOWNS.

The annual rate of mortality in the eight Scotch towns, which had been 23·2 and 22·3 per 1000 in the preceding two weeks, further declined to 21·2 during the week ending March 18th, but exceeded by 1·3 per 1000 the mean rate during the same period in the thirty-three large English towns. The rates in the eight Scotch towns ranged from 14·7 in Leith and 16·6 in Greenock to 23·5 in Glasgow and 27·5 in Dundee. The 597 deaths in these towns included 45 which were referred to measles, 6 to scarlet fever, 6 to diphtheria, 6 to whooping-cough, 5 to diarrhœa, 2 to small-pox and 1 to "fever." In all, 71 deaths resulted from these principal zymotic diseases, against 91 and 95 in the preceding two weeks. These 71 deaths were equal to an annual rate of 2·5 per 1000, which exceeded by 0·4 the mean rate last week from the same diseases in the thirty-three large English towns. The fatal cases of measles, which had been 53 and 49 in the preceding two weeks, further declined to 45 last week, of which 24 occurred in Glasgow, 11 in Dundee and 5 in Paisley. The deaths referred to diphtheria, which had declined in the preceding three weeks from 10 to 7, further fell to 6 last week, of which 5 were recorded in Glasgow. The 6 fatal cases of scarlet fever corresponded with the number in the previous week, and included 3 in Edinburgh and 3 in Leith. The deaths from whooping-cough, which had been 15 and 17 in the preceding two weeks, declined to 6 last week, of which 5 occurred in Glasgow, where the 2 fatal cases of small-pox were also recorded. The deaths referred to diseases of the respiratory organs in these towns, which had been 171 and 142 in the preceding two weeks, further declined to 136 last week, and were 47 below the number recorded in the corresponding week of last year. The causes of 48, or more than 8·0 per cent., of the deaths in these eight towns last week were not certified.

HEALTH OF DUBLIN.

The death-rate in Dublin, which had been 27·7 and 25·2 per 1000 in the preceding two weeks, rose again to 26·0 during the week ending March 18th. During the past eleven weeks of the current quarter the death-rate in the city has averaged 28·3 per 1000, the rate for the same period being 22·2 in London and 21·0 in Edinburgh. The 174 deaths in Dublin showed an increase of 5 upon the number in the preceding week, and included 4 which were referred to whooping-cough, 3 to "fever," 2 to measles, 1 to scarlet fever, 1 to diphtheria, 1 to diarrhœa, and not one to small-pox. In all, 12 deaths resulted from these principal zymotic diseases, equal to an annual rate of 1·8 per 1000, the zymotic death-rate during the same period being 2·3 in London and 1·6 in Edinburgh. The fatal cases of whooping-cough, which had been 5 and 1 in the preceding two weeks, rose again to 4 last week. The deaths referred to different forms of "fever," which had been 6 in each of the preceding two weeks, declined to 3 last week. The two fatal cases of measles exceeded the number recorded in any recent week. The 174 deaths registered in Dublin last week included 25 of infants under one year of age and 38 of persons aged upwards of sixty years; the deaths both of infants and of elderly persons considerably exceeded the numbers returned in the preceding week. Seven inquest cases and 6 deaths from violence were registered; and 63, or nearly a third, of the deaths occurred in public institutions. The causes of 6, or more than 3 per cent., of the deaths in the city last week were not certified.

CALCUTTA.

The Memorandum for the month of November last from the Health Officer Department, Calcutta, is the first monthly report in which the vital statistics of the entire area of Calcutta are shown together, in accordance with the wishes of the Indian Government. The total number of births registered in Calcutta during November was 1294, giving an annual birth-rate of 22·7 of the population. Of these 667 were males and 627 females. The total number of deaths (exclusive of still births) registered in Calcutta during November was 1868, against 1480 in the preceding month, showing an annual death-rate of 32·8, against 26·0 per 1000 of population. Of these, 127 were from cholera, 232 from bowel complaints, 1 from small-pox, 775 from fevers, 28 from injuries, 79 from tetanus and 626 from all other causes. The proportion of male to female deaths was 148 to 100. In urban Calcutta the number of deaths was 1096, giving an annual ratio of 28·1 per 1000; of these deaths 80 were from cholera. In suburban Calcutta the number of deaths amounted to 772, giving an annual ratio of 43 per 1000. There were 47 deaths from cholera and 109 from bowel complaints.

THE SERVICES.

MOVEMENTS IN THE MEDICAL STAFF.

SURGEON-CAPTAIN A. E. Morris will be transferred from Netley for general duty in the Southern district on the arrival there of Surgeon-Lieutenant-Colonel H. H. Stokes, A.M.S. Surgeon-Captain W. R. D. Crooke has been appointed to the Coldstream Guards in place of Surgeon-Captain J. F. Bateson. Surgeon-Lieutenant-Colonel Finlay, retired-pay, has been appointed to Jersey, and Brigade-Surgeon Batho, formerly at Jersey, to Guernsey. Surgeon-Captains Burrows and Robinson have embarked for Egypt, and Surgeon-Captain Hickson for Malta. Surgeon-Captain Geddes has been transferred to Devonport, Surgeon-Captain Harris to Aldershot as Adjutant of the Medical Staff Corps, and Surgeon-Lieutenant Read to Bristol. Surgeon-Colonel Jameson has arrived in England from Egypt and taken over the duties of Professional Assistant to the Director-General at headquarters in succession to Surgeon-Major-General Reade, who retires.

ARMY MEDICAL RESERVE OF OFFICERS.

Surgeon-Captain Frederick Flood Moore to be Surgeon-Major (dated March 22nd, 1893).

INDIA AND THE INDIAN MEDICAL SERVICE.

The following appointments have been made:—Surgeon-Major W. G. King, M.B., to act as Superintendent, Lunatic Asylum, Madras, during the employment of Surgeon-Lieutenant-Colonel S. L. Dobie on other duty. Surgeon-Major G. L. Walker, M.D., is appointed to be Civil Surgeon, Ootacamund, in succession to Surgeon-Major J. Maitland, M.D. Surgeon-Major O. J. Bourke, A.M.S., in Charge of Station Hospital, Kirkee, to the Medical Charge of Station Hospital, Purandhar, on expiration of Surgeon-Captain H. J. Barnes', A.M.S., tour of duty there on March 23rd, 1893. Surgeon Lieutenant-Colonel T. C. H. Spencer, I.M.S., 7th Regiment Madras Infantry, to the Officiating Medical Charge of the Regiment. Surgeon-Captain R. W. S. Lyons, M.D., to act, in addition to his own duties, as Assistant Surgeon to the David Sassoon Hospital, Assistant to the Civil Surgeon, Poona, and Teacher of Surgery and Midwifery, Medical School, Poona, during the absence of Surgeon-Captain W. H. Burke, M.B., on privilege leave. Surgeon-Captain A. V. Anderson, M.B., has been appointed to act as Deputy Sanitary Commissioner, Central Registration district, during the absence of Surgeon-Major A. W. F. Street, D.S.O. The services of Surgeon-Major F. F. MacCartie, M.B., B.Ch., have been placed at the disposal of the Government of India in the Department of Finance and Commerce. The services of Surgeon-Captain J. C. Lamont, I.M.S., Bengal Establishment, are placed temporarily at the disposal of the Chief Commissioner of Assam. Surgeon-Colonel P. S. Turnbull, I.M.S., having been appointed Surgeon-General with the Government of Bombay, will proceed to Bombay to relieve Surgeon-Major-General J. Pinkerton, I.M.S. On his departure from Kurrachee, the Military duties of his office will, as a temporary measure, be carried on by Surgeon-Lieutenant-Colonel W. D. Wilson, A.M.S. Surgeon-Captain J. C. Culling, A.M.S., on return from sick leave in England, is posted to general duty, Bombay district. Brigade-Surgeon-Lieutenant-Colonel A. S. Lethbridge, C.S.I., M.D., General Superintendent of Operations for the Suppression of Thagi and Dakaiti, has been nominated to be an Additional Member of the Council of the Governor-General for the purpose of making Laws and Regulations. The undermentioned officer passed the examination in the Parvatya (Colloquial) language at Bakloh on Jan. 20th, 1893: Surgeon-Lieutenant-Colonel A. S. Reid, I.M.S. Leave has been granted to Surgeon-Lieutenant-Colonel J. D. Gunning, A.M.S., for six months on

medical certificate and to Surgeon-Captain R. C. Thacker, A.M.S., to England for five months on private affairs. The undermentioned officers are granted furlough out of India: Surgeon-Lieutenant-Colonel W. F. Johnson, M.D., I.M.S., Queen's Own Sappers and Miners (u. p. a.) for six months, and Surgeon-Major E. S. Brander, Civil Surgeon, Etawah, on private affairs for eighteen months (from March 25th, 1893).

NAVAL MEDICAL SERVICE.

The following appointments are announced:—Staff-Surgeons: Everard H. Saunders to the *Colossus* and Alexander M. French to the *Boscawen* (dated March 22nd, 1893). Surgeons: Charles F. Warren to the *Seaflower*, Edward M. Dobinson to the *Martin*, Edgar F. Mortimer to the *Nautilus*, William E. Marshall to the *Pilot*, and Henry B. Hall to the *Liberty*. Surgeon and Agent: James C. Harkin, M.B., to Teelin and Malinmore (dated March 16th, 1893).

YEOMANRY CAVALRY.

Yorkshire Dragoons: Percy Barnard Mackay, Gent., to be Surgeon-Lieutenant (dated March 18th, 1893).

VOLUNTEER CORPS.

Rifle: 1st Volunteer Battalion, the Lincolnshire Regiment: Surgeon-Captain H. Wright to be Surgeon-Major (dated March 18th, 1893).—3rd Volunteer Battalion, the Lancashire Fusiliers: John Turvill Smith, Gent., to be Surgeon-Lieutenant (dated March 18th, 1893).—1st Nottinghamshire (Robin Hood): William John Sprott, M.D., to be Surgeon-Lieutenant (dated March 18th, 1893).—2nd Volunteer Battalion, the Duke of Edinburgh's (Wiltshire Regiment): Surgeon-Lieutenant F. F. Jones resigns his commission (dated March 18th, 1893).

THE VOLUNTEER OFFICERS' DECORATION.

A further list of those officers upon whom this decoration has been conferred appears in the *London Gazette* of March 17th, 1893. Amongst them are the following members of the medical profession:—*North-Western District.*—*Artillery:* 1st Cheshire and Carnarvonshire, Surgeon-Major William Bell.—*Rifle:* 1st Volunteer Battalion, the Prince of Wales's Volunteers (South Lancashire Regiment), Surgeon and Honorary Surgeon-Major John Webb Watkins, retired.—*Eastern District.*—*Artillery:* 1st Essex (Eastern Division, Royal Artillery), Surgeon-Major (ranking as Lieutenant-Colonel) Rea Corbet, retired; 4th (Cambridge University) Volunteer Battalion, the Suffolk Regiment, Surgeon-Major (ranking as Lieutenant-Colonel) Bushell Anningson, retired.—*Home District.*—*Rifle:* 2nd Volunteer Battalion, the Duke of Cambridge's Own (Middlesex Regiment), Surgeon-Lieutenant-Colonel Charles Arthur Patten; 1st Tower Hamlets (the Tower Hamlets Rifle Volunteer Brigade), Surgeon and Honorary Surgeon-Major Thomas Gray, M.D., retired.

THE SURGICAL CONGRESS AT PARIS.

The British Army will be professionally represented at the Surgical Congress which will open at Paris on April 3rd by Brigade-Surgeon-Lieutenant-Colonel Stevenson, Professor of Military Surgery at the Army Medical School, Netley.

A MEDICAL HERO.

According to our contemporary, the *Indian Medical Record*, Surgeon-Major Lloyd appears to have distinguished himself in the late attack on Sima by the Kachins. The garrison consisted of 275 men of the Military Police battalion. The Kachins, who had taken up a strong position, opened fire and attacked the stockade. Surgeon-Major Lloyd, at the request of the officer in command (Captain Morton), took charge of the upper angle. The latter officer was fatally wounded in the abdomen and Surgeon-Major Lloyd advanced to his rescue. There was a heavy fire from a large force of the enemy, but all the Kachins were driven from the immediate vicinity of the stockade by Surgeon-Major Lloyd and a strong party. This officer had previously served on the West Coast of Africa and had also seen much fighting in Boerland. He is said to be an excellent horseman and has the Zulu medal for South Africa.

THE WOUNDS CAUSED BY THE MANNLICHER RIFLE.

According to the reports which have appeared in several papers the wounds discovered in the person of a soldier accidentally killed in the vicinity of the Vienna Arsenal by a bullet from a Mannlicher rifle are said to have thrown a new light on the effects produced by that weapon. A post mortem examination of the body showed that the bullet in this instance had acted almost as if it were an explosive in the extensive nature of the injuries it had inflicted. But neither the exact nature of the injuries nor the structures injured are stated. Moreover, the projectile itself, owing to some flaw in its manufacture, was quite different to a small-bore bullet. The steel covering had broken off from its leaden core, and the two portions of the bullet are stated to have made separate and independent channels, which together formed an absolutely fatal wound; and the rifle had been fired at a very short range, when, according to the observations of some experimenters, these bullets seem to act almost as explosives. The results of experiments with small-bore bullets fired from rifles of this nature vary according to differences in the structure, strength and resistant powers of the parts struck, and, it is alleged by some, according to the ranges also at which the bullets are fired. From 50 to 200 yards the effect is said by some observers to be pulverising and destructive. According to the observations of a Chilian officer, who published as his graduation thesis a study of the wounds inflicted by the Mannlicher bullet, when the shaft of a long bone is hit at a short distance, the effects may be described as explosive. Surgeon-Captain Perry Marsh, as the result of his collection of the reports of cases of wounds inflicted with the Lee-Mitford missile at various ranges—from 3 yards to 3000—says, however, that there is no evidence of any extensive disorganisation of the parts unless considerable resistance had been offered to the passage of the missile by a large compact bone. A projectile moving with high velocity might give rise to much disruptive violence at the point of impact with a resisting structure, and it is probable that a bullet projected with high initial velocity from the muzzle of a Mannlicher rifle does not at once acquire its steady rotatory drilling motion, so that a shattering effect might take place at short ranges which would not ensue at longer ranges.

Correspondence.

"Audi alteram partem."

THE PROGNOSIS OF ALBUMINURIA.

To the Editors of THE LANCET.

SIRS,—The recent discussion on Dr. Ralfe's paper before the Medical Society and the leading article of THE LANCET of March 4th have drawn fresh attention to this vexed question, one which comes every week before the medical officers of life assurance companies and often enough before practitioners in every walk of medicine. It cannot be denied that medical opinion on the prognosis of albuminuria is in an unsettled condition, and I write to support your suggestion that the Medical Society should appoint a committee to consider and report upon it. In order, however, to do this usefully one must entertain clear ideas of the objects of the inquiry and of its limits. The whole subject of albuminuria in general is far too wide for handling in this manner. It is, in the first place, albuminuria unattended by other signs of kidney disease that has to be considered. When the kidney is affected by inflammatory or degenerative change, whether acute or chronic, temporary or permanent, such change being indicated by other signs besides the presence of albumen in the urine, the condition is outside the scope of inquiry. Medical science is already in possession of sufficient facts on these heads to form the basis of definite conclusions. It is otherwise with cases of uncomplicated and unexplained albuminuria. Facts, well analysed and digested, are here greatly needed. There are probably many conditions underlying albuminuria in these cases. Certain classes of cases have been pretty clearly defined already, although I cannot follow Dr. Ralfe in regarding the whole group of "functional albuminuria" as well defined. Dr. Pavy, Dr. Broadbent and others have described the condition known variously as cyclic, postural, or intermittent albuminuria; so that it is quite easy of recognition in typical cases, both in the mode of occurrence of the albumen and in the circulatory conditions which attend it. And typical cases are not at all uncommon in practice. A similar definition is needed for other forms of albuminuria, to be attained by the grouping together of cases which have clinical features in common. The class of cases which seem especially to need inquiry consists of those in which albumen in a measurable quantity (unlike the "very small trace" of Professor Gairdner's case

last week) is present in the urine during a course of years without other renal symptoms. The term "albuminorrhœa" has been proposed to denote these cases. They are, I believe, notwithstanding the statements recently made, not common, and their comparative rarity has hindered the growth of accurate knowledge concerning them. When the cases belonging to other classes have been sifted out it will be found that few observers are familiar with more than one or two of the class alluded to, and hence their impressions are necessarily derived from too small a field of observation. Here the record and careful analysis of a number of cases could hardly fail to lead to conclusions of value. In such cases we need above all the guidance of necropsies, and these are very seldom obtained. It has appeared to me not improbable that mechanical conditions, sometimes congenital, affecting one kidney or part of one kidney, may account for some of these cases. Mr. Henry Lee [1] once made a very suggestive post-mortem examination of the body of a man who had long had albuminuria without apparent cause. He found intussusception of one ureter. Another class of cases has been well described by Dr. Clement Dukes—temporary albuminuria, with headache, syncope and high vascular tension occurring in the period of youth—but these I think are on the border line of the present inquiry. There would seem to be inflammatory hyperæmia of the kidney in such cases. A further considerable class of cases which is of much importance to the life assurance examiner is that of temporary albuminuria from accidental causes, such as shock to the surface in bathing, severe muscular exercise, or ingestion of albuminous food—typical "physiological albuminuria," to use the phrase of Sir W. Roberts. Yet another class might be added—spurious albuminuria, in which the albumen is derived from other parts of the urinary system than the kidney; catarrh of the renal pelvis or ureter, or of the bladder, produces such a result. Slight gleet in young men vitiates our tests in not a few life assurance cases; and, lastly, as hinted by Dr. Routh, leucorrhœa is, in women, an exceedingly common cause of spurious albuminuria. Dr. Maguire and others have laid much stress upon the connexion between albuminuria and conditions of vascular tension and have advanced the view that, in most of the classes alluded to, the causes operated by means of alterations of the blood tension. There can be no doubt that the tension of the vessels is a factor of great moment in many of these cases and that there is a true "albuminuria of low tension" as well as "albuminuria of high tension." But added experience has convinced me that there are other factors at work in many cases and that vascular tension will not explain nearly all the instances met with.

One word with regard to statistics of albuminuria. Dr. Lauder Brunton is reported to have drawn, at the meeting of the Medical Society, a comparison between the proportion of albuminuria cases found amongst healthy men by himself in England (2 per cent.) and by observers in America (9 per cent.) respectively, and to have inferred from these statistics the greater prevalence of albuminuria in the latter country. But are not such statistics absolutely useless for comparison, since they depend entirely on the methods of the observer? I have myself stated elsewhere [2] the results of the examination of 282 presumably healthy adults for life assurance, amongst whom I found eighty-six, or 30 per cent., to show traces of albumen in their urine. No two observers will exactly coincide in their appreciation of a "trace" of albumen—that which one disregards, another, with finer methods, will enter as albuminoids. What then should be the scope of the inquiry which you, Sirs, have proposed? I take its subject to be "albuminuria unattended by other evidence of kidney disease." Records of cases, especially such as cover a series of years, should be collected. To what sources can we look for such records? I think with Dr. Tyson that it would be very difficult to make much use of the records of insurance offices. Their medical reports are commonly too brief for this purpose, and to be of use the observations almost need to be made with this special end in view. It is from the case-books of medical men, themselves interested in this subject, that material must be obtained—the notes of the cases of persons in the middle and upper ranks of society, who have been watched for years by their physicians. The records of necropsies should especially be coveted. What should be our aims in collecting and analysing these records? To place the cases in clinical groups so far as these can be defined. To do this one has to take account of all associated or pre-existing conditions, especially of vascular tension and blood conditions, and of inherited or associated diathesis. It would not be difficult to sketch out a schedule for the description of these cases. Cyclic albuminuria is so common that a few well chosen cases should suffice to represent this class, those in particular which extend over a good many years. Cases of permanent albuminuria without apparent cause should be stated in more fulness.

Lastly, there are two features in the records which would require especial attention. One is the kind of albumen present—whether globulin, propeptone or any other modification formed a part or the whole of it; where possible the tests employed should be stated. The other feature is the after-history—whether progressive renal disorder eventually supervened. Conducted on some such lines as these, I cannot but think that the inquiry would prove of much service, and that it might supply us with solid groundwork for the prognosis of these difficult cases.

I am, Sirs, yours truly,

Finsbury-square, March 11th, 1893. R. HINGSTON FOX.

[1] THE LANCET, March 8th, 1890.

[2] Albuminuria in relation to Life Assurance: a Paper Introductory to a Special Discussion. Transactions of the Hunterian Society, 1891-92. See also THE LANCET, Dec. 12th, 1891.

THE TREATMENT OF HÆMORRHOIDS AND PROLAPSE OF THE RECTUM BY CLAMP AND CAUTERY.

To the Editors of THE LANCET.

SIRS,—Mr. Henry Smith's article, published in THE LANCET of March 4th, on the above subject, might lead one to imagine that the operation by the clamp and cautery possessed every possible advantage. With all due deference to such an authority, I think it only right to recall to the minds of the readers of THE LANCET the disadvantages of this mode of treatment. It is at least four times as fatal as any other method of removing hæmorrhoids. The pain is as great as, if not greater than, that proceeding from other modes, for one should be well aware that, in the rectum as in other parts of the body, a burn is one of the most painful of all injuries; similarly, contraction, another usual sequela of burning, is by no means absent after the clamp and cautery procedure. Again, secondary hæmorrhage is likely to occur on the separation of the sloughs caused by burning. No doubt this operation may be suitable in selected instances, but to apply it to all cases of hæmorrhoids runs too near to the Procrustes' bed method of procedure to deserve much commendation at this period of surgery. It has been my lot to operate upon cases of hæmorrhoids in which the clamp and cautery had been used several years before. I treated them by crushing or by ligature, and was assured by the patients that the pain and after-trouble were far less than they had suffered after the burning operation. Tetanus, pyæmia, secondary hæmorrhage and so forth are almost unknown now, and in his reference to them Mr. Smith must be thinking of the era when the clamp and cautery were extensively used.

I am, Sirs, yours truly,

HERBERT ALLINGHAM, F.R.C.S. Eng.

Grosvenor-square, W., March 22nd, 1893.

"DENTAL ADVERTISING."

To the Editors of THE LANCET.

SIRS,—Your correspondent "A Looker On" thinks the agitation against dental advertising injudicious because it cannot possibly bear fruit. I hope it will bear good fruit. It is already awakening a great many to the disgrace of it and the degrading influence it has upon the whole dental profession, I trust this feeling will penetrate into the medical profession generally and through it into the public mind, and a man who makes a trade of an honourable profession—who seeks to emulate the proprietors of a soap or a mustard—will be scouted by all. It is true the General Medical Council admitted many advertisers to the Dentists' Register, but by so doing the General Medical Council did not make itself a party to advertising or sanction any vested interest in it, as your correspondent suggests. On the contrary, the General Medical Council have now a power over them they did not before possess. The Master of the Rolls and Lord Justices Lopes and Fry, sitting as a court of appeal in the Partridge *v.* General Medical Council case, held that advertising was disgraceful conduct in a professional respect, and "if there were evidence of it the decision of the Council is final and

conclusive. They are the sole judges."[1] Dentists can appeal to the courts it may be; so can the medical profession. But the courts do not approve of barristers or solicitors advertising, and the courts would like to see "the dental profession in the same high position as other medical men."[2] The Incorporated Law Society has converted the legal profession into an honourable condition. It is for the General Medical Council to take the dental in hand and assist us, as it has been doing lately, to weed out the advertisers.

I am, Sirs, yours truly,

Nottingham, March 12th, 1893. HENRY BLANDY.

"HOW UNION APPOINTMENTS ARE MADE."

To the Editors of THE LANCET.

SIRS,—"M.R.C.P." complains that union appointments are generally given to the man who buys the practice, and I venture to think ninety-nine men out of every hundred would say, "and rightly so too." With your permission, I will ask "M.R.C.P." this question: Suppose, for argument's sake, he buys a village practice and I obtain the union appointment which had always belonged to that practice and worth, say, from £50 to £60 a year, and the work scattered over six or seven or more parishes, could I live and keep a horse on my appointment? If not, what follows? I must, to obtain the merest bread-and-cheese existence, be constantly poaching on the practice he has bought. What it may be in very large towns or cities I am not prepared to say, but in a village practice it would be impossible to do without the appointments such as union and clubs, and, badly as we are remunerated for this work, they help to form an important total. The amounts, though small, are paid regularly, and we know when to expect them, which is not the case with private patients. Under these circumstances an opposition doctor in a village practice would be not only a farce, but the profession must in various ways be degraded thereby, and one of the two must inevitably come to grief. How would "M.R.C.P.," after purchasing the practice, like to be the victim? Besides, I think it is mean and unprofessional in any man to oppose another after he has invested his small capital—perhaps all he has—in one of these practices. From "M.R.C.P.'s" style of argument it seems to me that the election was right when he was elected, but wrong when he was not.

I am, Sirs, yours faithfully,

March 21st, 1893. M.R.C.S. Eng. &c.

CANCER PLASTERS.

To the Editors of THE LANCET.

SIRS,—An inquest was lately held at Chester-le-Street which throws a strong light on the unsatisfactory state of the existing laws with regard to "quacks." A woman aged fifty, in spite of medical advice, went to a "cancer curer," living close to Durham, who for a consideration of 15*s.* for the first visit and 5*s.* for each subsequent one applied plasters to a scirrhus of the breast about the size of a "small hen's egg." The "treatment" was continued at the rate of a plaster a week from the end of September, 1892, till death on Feb. 13th, 1893. The surgeon, who had originally advised operation, stated at the inquest that (although all operative treatment was refused and the persistent use of the plasters against his urgent advice made him decline to attend the case further) he thought it probable that the woman would have lived for about another two years had not death been "accelerated by the application of caustic plasters." Pressed by the coroner as to the composition of the plasters, with considerable hesitation the woman stated that they were made of "the herbs wood betony, crow's toe and yarrow," dried, powdered, mixed with white of egg and spread upon bladder skin. She swore that no corrosive or other drug was used. After an hour's deliberation the jury returned a verdict "that deceased died from a cancer in her left breast," declining to express any further opinion. After the medical evidence one must regard such a verdict with great dissatisfaction. Within the last few months three cases of such treatment have come under my notice, two of them the result of the same woman's handiwork.

Case 1.—A domestic servant aged twenty-nine applied to the above woman for what from the history was a small warty growth on the dorsum of the right hand, about the centre of the metacarpal bone of the little finger. She was told that it was a "shell cancer," and that after a series of plasters it would drop off. Some ivy plasters were applied. When I saw her there was a large, foul, dark-coloured oval slough over the above position, filling up an ulcer measuring one inch and a half by three-quarters of an inch. The sheaths of the tendons were eaten through, the metacarpal bone was eroded and the metacarpo-phalangeal joint opened up, necessitating amputation of the little finger with a large portion of its metacarpal. The wound rapidly healed and she is now at her duties. The ulcer showed every sign of a corrosive action, and neither slough nor portions of skin removed showed any signs of malignant growth.

Case 2.—A joiner aged fifty-nine presented himself with epithelioma of the lip and the angle of the mouth. Five years ago he burnt his lip with a clay pipe, which left a small sore, which grew harder and never healed. For the last ten months he had been under the same woman and had numbers of plasters. The growth extended from almost the centre of the lower lip backwards to the left angle of the mouth; it then ran backwards for about one inch into the cheek, where there was a mass of epithelioma the size of half a walnut. Its removal (there were no enlarged glands) necessitated a very extensive loss of tissue, resulting in considerable deformity. The cheek healed well, but when seen in January there were signs of recurrence on the lip.

Case 3.—A miner aged fifty about three years ago noticed a "marble" under the skin of the left thigh just above the patella. About two months before being seen he noticed that the lump was growing rapidly. He consulted a man who professed to cure cancers, and who gave him a bottle of liniment to use and "punched" the tumour to try and "burst it." Fortunately he did not succeed, for an encapsuled sarcoma, hæmorrhagic, the size of a child's head, was removed, together with a large portion of skin implicated, from just above the left knee. The tumour had no deep connexions, and the large raw surface left after so large a removal of skin slowly granulated up. I have no doubt, from the appearance presented by the first two cases, that the plasters contained some powerful corrosive. The nature of the herbs mentioned I do not know. I think if all such cases were reported it might lend to some more stringent regulations being adopted.

I am, Sirs, yours truly,

SELBY W. PLUMMER, M.B., B.S.

[1] See report in the Journal of the British Dental Association, vol. xiii., p. 225, April, 1892.

[2] Master of the Rolls: Ibid.

"SOME REMARKS ON THE PATHOLOGY AND TREATMENT OF TYPHOID FEVER."

To the Editors of THE LANCET.

SIRS,—It was with considerable interest and pleasure that I read Dr. Latham's remarks on the pathology and treatment of typhoid fever. During the past seventeen years I have used calomel in the treatment of every case of the disease that came under my care, and always with the same results. I found it to lower the temperature, clean the tongue and brighten the patient, and in a large number of cases occurring in healthy subjects, and recognised early, the treatment was followed by a complete abortion of the disease. Being a general practitioner, the cases I have treated came early under my observation—that is, within the first ten days—consequently the mischief had not taken deep hold of the glandular structures of the bowel. Calomel may not possibly have acted so impressively had this been otherwise. It is obvious that the main influence of the drug is in its germicidal and antiseptic properties. Yet I have been much impressed with the idea that much of its beneficial influence rests on the effect it has in relieving portal congestion, which is always present, producing a condition of turgescence in the immediate neighbourhood of the glandular mischief that much intensifies the disease. I have also observed that after the first few doses of calomel my patients passed much larger quantities of urine, which, no doubt, relieved the system of poisonous results. I have never ventured to give larger doses than two grains, generally one grain and a half, three times daily, either alone or combined with compound ipecacuanha powder or opium, according to the frequency of the purgation. My fear of larger quantities has rested on a dread of increasing the peristaltic action of the bowel, thus preventing that rest which I recognise as necessary wherever inflammation is present. I have also found the counter-irritant effect of a large mustard plaster over the abdomen on first recognising the disease as very

beneficial. I may here say that from the results I have obtained in early phthisis from calomel vapour inhalations I believe they will yet be recognised as a most valuable aid in the treatment of this formidable disease. I should be very pleased if some of your readers who have an opportunity of observing the diseases that occur amongst those who work in mercury would say in what proportion phthisis occurs amongst that class of operatives, also if they find an immunity from typhoid fever amongst them.

I am, Sirs, yours truly,

WM. BENNETT, M.D.Durh.

Waterloo-road, Manchester, March 14th, 1893.

"ISOLATION *v.* INUNCTION."

To the Editors of THE LANCET.

SIRS,—Mr. Curgenven has been misinformed as to the action of the Enfield Local Board. He says that "in 1891 the Enfield Board proposed to build a hospital. They were advised to try the inunction method of disinfection first. They did so, and the hospital is not yet built." In December, 1891, a temporary hospital was not only proposed to be built but actually erected, and some 120 cases have been admitted up to the present time, although eucalyptus has been freely distributed at infected houses, and has been applied thoroughly to the patients admitted. The local board was never advised to try the inunction method first, and the delay in the erection of the permanent hospital on another site, which has been purchased, has had nothing whatever to do with the inunction of eucalyptus. The plans are now prepared, and a loan is about to be applied for to build. I have no doubt that eucalyptus is a disinfectant, but I am equally sure that it cannot be relied on in place of isolation.

I am, Sirs, yours truly,

Enfield, March 20th, 1893. J. J. RIDGE.

LIVERPOOL.

(FROM OUR OWN CORRESPONDENT.)

The Assizes.

IN his charge to the grand jury at the opening of the assizes here on the 14th inst. Mr. Justice Wills laid great stress on the value of the medical evidence in two of the three cases of murder. In one it would go very far to reduce the crime to manslaughter, in the second it went far to show that the crime was really manslaughter and not murder, whilst in the third it would go very far to prove or disprove the statement made by the prisoner. The mate of a ship was tried for stabbing the captain whilst the vessel was on her voyage. There was no provocation whatever, the captain having merely desired the prisoner to keep on deck during his watch. The judge dwelt upon the danger of using a knife under such circumstances, far away from medical aid. It was aggravated by the fact that had the captain died the prisoner would, under ordinary circumstances, have taken the command. He sentenced the prisoner to seven years' penal servitude.

Port Sanitary Work during the Year 1892.

The report of the medical officer of health with reference to the work done last year to safeguard the health of the port against the importation of disease by vessels arriving in the river has been printed and is a very interesting document. Very effective measures were taken to prevent the entry of any cases of cholera during its prevalence in Hamburg. Two additional medical inspectors were temporarily appointed, in accordance with the order of the Local Government Board of Sept. 6th, to visit all ships arriving in the Mersey from Hamburg and other cholera-infected ports. These duties were performed by Drs. Roberts and Imlach until the necessity for them ceased to arise. The number of vessels inspected during the entire year was 3867, whereof 2921 were British. The number found to be in good or fair condition was 3399, whilst 468 were defective in regard to sanitary requirements, the principal offenders as regards cleanliness being, as in previous years, steamers carrying cattle. With the exception of these the condition of the British ships is reported to have been very satisfactory. Vessels of other nationalities have improved, especially the Dutch. Twenty-five Spanish ships were fumigated and cleansed and certificates given by the medical officer, in accordance with the requirements of the Spanish Government. The number of emigrants passing through Liverpool during the year was 200,786, being 5632 less than in the previous twelve months. This reduction is more than accounted for by the great falling off in the number of passengers to the United States, owing to the cholera scare, from 170,210 in 1891 to 157,212 in 1892. The report contains particulars in diary form of every case of sickness on board ship and amongst emigrants on arrival in Liverpool, with details of treatment.

The Resident Medical Officers of the Liverpool Workhouse and their Accommodation.

Drs. Robertson and Alexander, the visiting physician and surgeon to the Liverpool Workhouse, having noticed the frequent breakdown in the health of their resident medical officers, have called the attention of the workhouse committee to the insanitary condition of the quarters allotted to the resident staff. These are in the centre of the building, close to the wards. The chairman and another member of the committee admitted the existence of the insanitary condition and a subcommittee was appointed to inquire into the subject and to report to the committee.

The Health of Liverpool.

At the last meeting of the health committee, held on the 16th inst., it was stated that the deaths for the week were 83 below the average of the past ten years. Under the Infectious Disease Notification Act were reported 40 cases of scarlet fever, 19 removed to hospital; 15 of "fever," 7 removed to hospital; 2 of diphtheria, not removed; 5 of small-pox, all removed to hospital; and other cases. Patients under treatment in hospital for the week ending the 16th inst. were—typhus fever, 9; typhoid fever, 36; scarlet fever, 116; diphtheria, 1; small-pox, 15; chicken-pox, 5. So far small-pox has not made any serious advance. The weather has been very variable.

March 20th.

NORTHERN COUNTIES NOTES.

(FROM OUR OWN CORRESPONDENT.)

Newcastle Surgical Aid Society.

THE report submitted to the annual meeting of the Newcastle Surgical Aid Society shows a falling off in subscriptions during the past year. It is the same all round with our charitable institutions, and this is to be accounted for by trade depression.

Small-pox in the North.

One still hears of cases here and there over the northern counties. Cases are reported from Hexham, Durham City, Jarrow, &c. It is the same story; the disease is disseminated by vagrants and tramps, and there seems to be a good deal of difficulty in getting this class isolated and so stamping out the disease.

Cumberland and Westmoreland Convalescent Institution.

The annual meeting of the Cumberland and Westmoreland Convalescent Institution was held at Carlisle last week, when the Bishop of Carlisle presided. It was stated that 623 patients had been admitted. Of these 239 were from Carlisle, 207 from other parts of Cumberland, 62 from Carlisle Infirmary, 53 from Westmoreland, 33 from Northumberland and 13 from other parts of England, with 16 from Scotland. The financial statement was on the whole more satisfactory than is usual with similar institutions as regards the past year.

Sunderland Provident Dispensary.

The Sunderland Provident Dispensary cannot be classed with the so-called "Provident" ventures started to provide for its originators. It was shown in the last report that nearly 22,000 prescriptions had been dispensed, over £500 had been paid to the medical staff, and the year closed with a good balance in hand.

Death of a Newcastle Centenarian.

Mrs. Kate O'Hara died at Newcastle last week (in a district not distinguished for its sanitary perfections) in her 106th year. It appears that this is a genuine case as she was returned as 103 in the last Census. She was also entertained by the Mayor at that time.

Death of Dr. Candlish, late of Alnwick.

The news of the death of Dr. Candlish, late of Alnwick, was received with great regret. Dr. Candlish died at Ayr last week, to which place he retired about two years ago after

a residence at Alnwick of about thirty years. I noted the banquet which was given him by the townspeople of Alnwick on his retirement. Dr. Candlish, who was held in the greatest respect by all classes in the north of England and whose character was marked by a distinct individuality, was a nephew of the great Dr. Candlish, of the Free Church of Scotland.

The late Dr. Heath of Newcastle.

I hear that the munificent bequests of the late Dr. Heath, including £6000 for a residential hall in connexion with the Durham College of Medicine, Newcastle, have been paid over this week to the trustees. Dr. Heath's bequests to educational and charitable objects amount to £30,000.

Newcastle-on-Tyne, March 22nd.

IRELAND.

(FROM OUR OWN CORRESPONDENT.)

Royal College of Surgeons.

A MEETING of the Fellows to consider the "Government of Ireland Bill" as affecting the future state of the College and the position and interests of its Fellows and Licentiates was held at the College on Saturday last, presided over by Mr. Thornley Stoker, Vice-President, in the absence of the President from illness. The following resolutions were proposed by Sir George Porter, Bart., seconded by Sir William Stokes, and, after considerable discussion, adopted by a large majority: "That we protest against the passing of the Government of Ireland Bill now before Parliament, as, should it become law, it would seriously injure the College and be injurious to the interests of its Fellows and Licentiates, inasmuch as—firstly, that it imperils the existence of the Charter and of the College; secondly, that, the property of the College exclusive of its buildings being secured by mortgage on lands, its value will be depreciated; thirdly, that the moneys provided for medical charities (including Poor-law, medical and sanitary services), amounting to about £100,000 a year, appear to be totally unprovided for; fourthly, that the Bill makes no provision for the registration of the members of the medical profession under the General Medical Council or for the control of that Council over medical education in Ireland; that as a result it is to be feared that students intending to practise outside Ireland will no longer be educated at home or take their diplomas from the Irish licensing bodies." The financial aspect of the Bill as it would affect the revenues of the college was the only part of the Bill permitted to be discussed.

Stewart Institution for Imbecile Children.

This institution has been in existence for twenty-four years, and its usefulness is shown in the increasing contributions and the demand for additional accommodation. As to the proposed extension of the buildings, the committee are not yet in a position to undertake it, for the cost of carrying out the plans has been found to be higher than was originally estimated. Up to the present the funds available are about £5000, but at least as much more will be required before the principal portion of the work can be commenced. The postponement of the work has entailed great inconvenience, and not the least of the drawbacks attendant on the present limited accommodation is the entire inability of the management to provide the necessary arrangements called for by the friends of imbecile children who are in a position to pay for their maintenance. As this is a considerable source of income in similar establishments in England and elsewhere, there is reason to believe that the Stewart Institution suffers a large annual loss by being unable to meet such applications, and were the committee in a position to receive private pupils at suitable rates of payment it is certain they would be enabled to maintain a much larger number of free pupils than is possible at present.

Sanitary Institute Lectures.

The first of a series of lectures organised by the Sanitary Institute of Great Britain and Ireland, under the auspices of the Corporation of Dublin, was delivered on Saturday by Sir Charles Cameron. They are chiefly intended for sanitary inspectors and candidates for that office, and will be followed by an examination for the certificates for sanitary inspectors given by the Sanitary Institute. Sir Charles Cameron's address referred to the benefits of sanitary legislation and showed that the Corporation, by an expenditure of £600,000 in sanitary improvements, had caused the high fever death-rate of Dublin to be now below that of the mean rate in the English towns. The lecturer pointed out how difficult it was in Dublin to have nuisances abated by giving notice, and that it was impossible to get more than 90 per cent. of them abated without tedious legal proceedings being taken, whilst in most English towns notices to abate nuisances were obeyed at once.

Kingstown Main Drainage.

The Kingstown town commissioners have resolved that it is desirable to ascertain whether an extensive scheme of main drainage is necessary for their township, and with that object a special committee has been appointed to make the proper inquiries and to advise the board thereon. The committee will have power to make arrangements to complete the float experiments requisite to ascertain the direction of the tidal currents and, upon the rejection by the authorities of the Blackrock and Kingstown Drainage and Improvement Bill now before Parliament, to prepare and submit to the Commissioners such scheme as they may deem necessary for the effectual drainage of the district.

Cloyne Dispensary.

The Local Government Board have not insisted upon the resignation of Mr. Riordan, medical officer, on account of his long career of usefulness and at the unanimous request of the Dispensary Committee. There was a torchlight procession of his admirers when it became known that he would continue to act as medical officer of the district.

March 21st.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

Suture of Ulnar Nerve Four Months after Section; Rapid Return of Sensation.

ON March 7th M. Berger presented to the Academy of Medicine a little girl whose ulnar nerve, divided by the bursting of a bottle, had been reunited by suture four months after the injury. At the time of the accident the ulnar artery had been tied, but the divided nerve had been left untouched. M. Berger found the divided ends of the nerve separated by an interval of one centimetre, each end being the seat of a neuroma. These growths, together with a slender fibrous cord uniting them, were removed and the ends brought together with silk sutures. On the day following the operation the anæsthesia of the little and half the ring finger had disappeared, and the trophic troubles in their turn soon did the same. The child's hand no longer presents the appearance of *la grippe cubitale*, and the local muscular paralysis is no longer apparent. Professor Tillaux explains the rapid return of nerve function by the almost instantaneous re-establishment of the current brought about by the accurate apposition of the nerve ends. Both MM. Tillaux and Nicaise have related cases where sensibility was restored five hours after paring and union of the cut ends of a nerve. In two cases, reported by MM. Polaillon and Segond, the same result was observed a quarter of an hour after the operation. M. Laborde expressed himself as not satisfied with M. Tillaux's theory, and he proposes to initiate a discussion on the subject at no distant date.

The Consumption of Ice in Paris.

Visitors to this "city of light" cannot fail to note the enormous consumption of ice in the cafés and restaurants, and many of them must have indulged in speculations on the origin of such a vast supply of the refreshing commodity. Most of it is natural ice collected during the winter months from various lakes in the neighbourhood of the capital. Of the total amount thus garnered (30,000 tons) the Lac Daumesnil at Vincennes is responsible for from 12,000 to 15,000 tons and the Bois de Boulogne lake for half that quantity. The remainder comes from ponds at La Briche, St. Ouen, Chaville, St. Cloud, Château Frayet and Tourneil. The original cost of this natural ice varies from three to four francs a ton. Of the artificial product the Société Anonyme des Glacières de Paris supplies 24,000 tons and the Société Anglaise from 2000 to 3000 tons, the manufacturing cost being eighteen or nineteen francs per ton. With regard to the natural ice I have already drawn attention to its frequent impurity. Take, for instance, the Daumesnil Lake, from which is drawn half the supply of

natural ice consumed in Paris. The *Médicine Moderne* informs its readers that a sewer opens at the top of that sheet of water and that, besides, it is fed by an artificial stream, which, rising in the plateau of Gravelle, crosses a large part of the Vincennes wood. A visit to that wood on a fine Sunday will easily enable the observant sanitarian to judge of the manner in which the waters of this artificial river are adulterated by the numerous holiday-makers strolling on its banks. Until provisions are made by the authorities to safeguard the purity of the natural product I should strongly recommend visitors to this city who indulge in the consumption of ice to insist upon being supplied with that manufactured artificially by the companies above mentioned.

The Petroleum Treatment of Diphtheria.

In the third number of the *Normandie Médicale* Dr. Flahaut relates the history of an epidemic of diphtheria that occurred at La Neuville—Champ-d'Oisel—in 1891-92, seventy persons being attacked. In the first and earlier series of cases (thirty) reported the usual topical treatment (carbolic acid, sublimate, salicylic acid &c.) was followed, with the result that nine out of the thirty patients died. For the remaining forty, local applications of petroleum were employed, all the cases recovering. From the day on which this new treatment was instituted the mortality became suddenly *nil*. M. Flahaut says:—"I commenced this mode of treatment on a little girl whose fauces, tonsils and soft palate were covered with thick false membranes. From the very first applications of the petroleum the membranes were seen to whiten, retract and almost dissolve under the brush. The same evening she breathed more easily and expelled some membranous exudations. Five days later the child was, if not absolutely cured, out of danger, and complete recovery was only a question of time. From that time forth I employed petroleum locally in all my cases and I congratulate myself on having done so, since they all recovered." A throat brush dipped into the petroleum and shaken free of any excess of the liquid is passed every hour or every two hours, according to the gravity of the case, over the parts covered by membrane. The application is said not to be painful—on the contrary, it produces a soothing effect. The only drawbacks are the disagreeable taste and odour of the petroleum. Membranes expelled by patients and received into capsules containing petroleum are almost totally dissolved after a gradual process of disintegration. The treatment lasted on an average a fortnight, at the end of which recovery generally occurred almost suddenly. The diagnosis was confirmed by the discovery of the Klebs-Loeffler bacillus and by the supervention in several instances of complications and sequelæ, such as bronchitis, broncho-pneumonia, paralysis and albuminuria.

The Orchiococcus.

It has hitherto been taken for granted that the occurrence of orchitis—or rather epididymitis—in the course of an attack of gonorrhœa was due to the invasion of that organ by the migration of the gonococcus of Neisser. MM. Hugouneng and Eraud (Académie des Sciences, Feb. 27th) appear, however, to have successfully isolated the specific microbe of blennorrhagic epididymitis. The newly discovered micro-organism is a diplococcus of much the same shape as Neisser's gonococcus, but it is larger, the isolated coccus measuring about 1 μ. Like the gonococcus, it is discoloured by Gram's method, but it is distinguishable from it by the following properties: whilst the gonococcus is with difficulty cultivated even on human serum, in which it dies at the end of two or three days, the orchiococcus thrives well on peptone, peptonised gelatine, ordinary bouillon and alkaline solutions of casein and nuclein, maintaining in these different media the faculty of reproduction and the integrity of its forms for a year and longer. The orchiococcus is frequently found in gonorrhœal pus during the first few days of the disease. It happens, however, sometimes that this pus sown upon gelatine yields no culture. Now, when this is the case, such patients are never attacked with orchitis. If, on the contrary, pus thus grown on gelatine yields colonies of the micro-organism, the onset of the testicular complication is to be feared. Negative cultivation results enable us therefore to foretell that the gonorrhœa will run its course without the epididymis being infected. The microbe exercises no action on the conjunctiva, the areolar tissue, the peritoneum, or on the urethra itself. On introducing the culture (on peptonised bouillon) into the testis of the dog, an attack of orchitis is induced. The inflammatory products collected from the bouillion culture produce the same effects, but act much more energetically, the orchitis induced being often accompanied by profuse suppuration and being sometimes followed by atrophy of the affected organ.

March 21st.

BERLIN.

(FROM OUR OWN CORRESPONDENT.)

The Balneological Society.

THE discussions of the fifteenth annual assembly of this Society began on the 11th, in the Lecture Hall of the Pharmacological Institute here. Jahn of Berlin spoke on the Physical Properties of Fluids, and Gans of Karlsbad communicated the results of experimental investigations of Diseases of the Kidneys. The second meeting was held on the 12th. Weissenberg of Kolberg spoke on the Most Urgent Hygienic Requirements of the German Health Resorts; and Liebreich on Natural and Artificial Mineral Waters. The third meeting was held on the 13th. Winternitz of Vienna discoursed on the Cold Water Treatment of Articular Rheumatism, Leyden on Diabetes, Müller of Berlin on Gymnastic Exercises for the Simultaneous Development of the Antagonistic Muscles, and Kolbe of Reinerz on the Effects of Mineral Waters in the Treatment of Phthisis. The fourth meeting was held on the 14th; Lenné of Neuenahr, Kallay of Karlsbad and Liebreich of Berlin spoke on Diabetes, Dührssen of Berlin on the Therapeutic Results of Baths in Diseases of Women, Marcus of Pyrmont and Senator of Berlin on the Treatment of Basedow's Disease, and Liebig of Reichenhall on Increased and Diminished Atmospheric Pressure. The fifth and last meeting was held on the evening of the 14th. Keller of Rheinfelden read a paper on the Use of Brine Baths containing 12 to 25 per cent. of Salt, Abel of Odessa on Mud and Brine Baths in the Health Resorts near Odessa, Saalfeld of Berlin on the Care of the Skin, Liebreich on the Bathing and Rubbing of New-born Infants, Schubert of Reinerz on Bloodletting and Putzar of Königsbrunn on Neurasthenic Gastro-intestinal Atony.

The German Epidemic Bill.

A meeting was held for the discussion of the Epidemic Bill in the Imperial Home Office on the 14th inst. Secretary of State von Boetticher presided and the Prussian Minister of Ecclesiastical, Educational and Medical Affairs, with several counsellors of the medical department, the Director of the Imperial Office of Health, Professor Koch, and numerous representatives of the various German States were present.

The International Sanitary Conference.

The King of Saxony received the delegates to the International Sanitary Conference on the 15th inst. and entertained them at a banquet, at which the Saxon Ministers and the members of the Diplomatic Corps were present.

Miscellaneous Items.

Dr. Ernst Siemerling, assistant in the Clinic for Mental Diseases at Berlin, has accepted the posts of Director of the Clinic for Mental Diseases at Tübingen and of professor there.

The general assembly of the Society of Prussian Medical Officials will be held in the Langenbeck House here on the 10th and 11th prox.

The German Anatomical Society will hold its annual meeting at Göttingen on May 21st, 22nd, 23rd, and 24th, Professor Waldeyer in the chair.

Berlin, March 20th.

Obituary.

SEPTIMUS W. SIBLEY, F.R.C.S.

THE seventh son of the late Mr. Robert Sibley, architect and surveyor of the county of Middlesex, the subject of this notice was born in Great Ormond-street in 1831. He was educated first at a private school and then at University College School, London, where he obtained several prizes for mathematics pure and applied and for natural philosophy. He then attended lectures at University College under Professor de Morgan and at this time worked chiefly at higher mathematics and experimental philosophy with his friends Sir William Flower, Dr. Routh and the late Sir Robert Fowler

At this period of his life he desired to enter upon a mathematical career. He entered as a student at the Middlesex and University College Hospitals in the year 1848, attending lectures at the latter and clinical work at the former school. Whilst at University College Hospital he obtained the gold medal in medicine, the first silver medal being obtained by Dr. Bartlett of Ipswich and the second silver medal by Sir Joseph Lister. He also obtained the silver medal in surgery, the gold medal being carried off by Mr. J. S. Gamgee, and the second silver one by Sir Joseph Lister.

His chief contemporaries at the hospital were William Flower, Joseph Lister and William Roberts. He became a Member of the Royal College of Surgeons in the year 1852 and a Fellow in 1857. At the Middlesex Hospital he was at first house surgeon, and then medical registrar, from 1853 to 1860. He was afterwards appointed lecturer in pathology, which post he held for ten years. In 1856 Mr. Sibley became partner with Mr. Thomas Farquhar Chilver, succeeding Mr. Martin Tupper. This practice was one of the leading ones of the day, being founded by Sir Walter Farquhar, physician to George IV. He was an active member of the Middlesex Hospital Medical Committee for many years and a prominent member of the British Medical Association. He afterwards became a Fellow of the Royal Medical and Chirurgical Society, a member of the Council of the Clinical Society and a member of the Pathological Society. In 1886 Mr. Sibley was elected to the Council of the Royal College of Surgeons, representing the general practitioners, the duties of which post he discharged for several years. He was also chairman of the Managing Committee of the Dental Hospital of London for ten years, succeeding his friend Campbell de Morgan. His chief contributions to the literature of medical science were "History and Description of the Cholera Epidemic in London in 1854" in the Royal Medical and Chirurgical Society's Transactions, and "Statistics on Cancer," "Fibrinous Obstruction of Arteries," "The Nature of Colloid" &c. He married a daughter of the late Sir Robert Carden, Bart., M.P. His widow, two sons and five daughters, together with a brother, General T. H. Sibley, J.P., and his sister, Lady Tomes, the wife of Sir John Tomes, F.R.S., survive him.

DR. RICHARD ALFRED O'BRIEN.

AN Irish practitioner of much experience and skill in Oriental maladies, Dr. O'Brien had for some years lived in retirement in a Florentine villa, where, on Tuesday, Feb. 28th, he passed away after a lingering illness. His professional studies were prosecuted partly in Dublin and partly in Pennsylvania, at which latter school he graduated M.D. in 1855. In 1864 he qualified as Licentiate in Medicine at the King and Queen's College of Physicians of Ireland, taking its diploma in Midwifery in the same year; whilst, also in 1864, he became Licentiate in Surgery of the Royal College in Edinburgh. Of the latter College he was elected a Fellow in 1882, having become a Member of the former in 1881. His professional life was spent chiefly in Hong Kong, where he steadily rose to be the trusted and esteemed consultant of a large *clientèle*, American as well as British. About ten years ago he withdrew from regular practice and devoted much of the fortune he had amassed to the promotion of the charitable objects dear to him throughout life.

DR. MASSIMILIANO CARTEI.

DEATH, which has of late been busy in the Italian ranks of the profession, has removed few abler or more accomplished practitioners than Dr. Cartei of the commune of Brozzi in Tuscany. Born in 1827, he was, like many of his compatriots of that generation, swept into the revolutionary vortex, out of which emerged Italy "one and independent." Experience in camp and on battlefield was not thrown away upon him, but gave to his medical studies a seriousness and a practical efficacy which reacted for good throughout his academical career. Shortly after the upheaval of 1848 he resumed attendance at the Pisa School, and having graduated there he was appointed assistant physician in the "Arcispedale" of Santa Maria Nuova in Florence. Thereafter he rejoined his father (also a medical practitioner) and, having settled in the commune of Brozzi, was presently engaged in combating the terrible cholera explosion of 1855. By his energetic philanthropy he founded first an asylum for the sick poor and then a hospital, his experience of the epidemic having taught him how signally visitations of that kind are cut short or mitigated, and their professional teaching utilised, by such institutions, well-appointed and on an adequate scale. By 1887 his health constrained his retirement to Florence, where, to the regret of a wide circle of friends of all professions, he died on Feb. 23rd.

Medical News.

UNIVERSITY OF CAMBRIDGE.—At a congregation held on the 18th inst. the degree of Bachelor of Medicine and Surgery was conferred on the following gentlemen:—

Herbert John Paterson, Trinity; Percival Horton-Smith, St. John's; Reginald Darby Randell Crofton-Atkins, Clare; John Shepperson Barnes, Pembroke; George William Harvey Bird, Emmanuel.

CORSTORPHINE CONVALESCENT HOME.—On Wednesday, March 15th, this institution, to which most of the convalescents from the Edinburgh Royal Infirmary belong, was reopened after alterations by the Marchioness of Tweeddale.

EPSOM COLLEGE NATURAL HISTORY SOCIETY.—The report of this society for the past year gives a very favourable account of the work that has been accomplished in the various sections since the last statement was issued. It is very gratifying to find that the interest heretofore exhibited by the students of the college in the aims and objects of the society shows no sign of falling off, but rather goes on increasing from year to year. A society such as the one under notice must prove a useful auxiliary to the scholastic work usually undertaken in schools and colleges.

A JOINT HOSPITAL FOR HALIFAX.—On the 16th inst. a meeting of representatives of sanitary authorities of Halifax and its vicinity was held in the Town Hall to consider the advisability of forming a joint hospital for the area. The Mayor, who presided, said that Halifax was now provided with a small-pox hospital, but there was no fever hospital or building specially devoted to the reception of persons suffering from contagious diseases. It was, however, desirable that a hospital for this purpose should be provided, the benefits of which might be participated in by surrounding districts. Though there were a few dissentients at the meeting the proposition gained the support of the great majority of those present.

BRITISH MEDICAL TEMPERANCE ASSOCIATION.—A general meeting was held on March 17th at the London Temperance Hospital, by permission of the board, and was well attended. Dr. B. W. Richardson, F.R.S., read a paper entitled a Review of Twelve Months' Medical Practice in the Wards of the London Temperance Hospital, which consisted of a summary of the nature and results of his first completed 200 cases with notes of the treatment pursued in some of them. Of these 58 per cent. recovered, 22 per cent. were relieved, 5·5 per cent. were unrelieved and 14·5 per cent. died. The cases were admitted as in other hospitals and many were severe. No alcohol had been administered in any case or in any form and the results had been satisfactory. He had largely employed inhalations of oxygen, peroxide of hydrogen and ozonic ether. Remarks were made by Dr. Norman Kerr, Dr. Moir and Dr. Ridge, the last speaker, as a physician of the same hospital, testifying to his surprise and gratification at the results obtained.

MASON COLLEGE, BIRMINGHAM.—Mr. Oliver Pemberton, F.R.C.S., J.P., was elected bailiff of the Trust and President of the Council at the twenty-second annual meeting of the trustees on the 23rd ult. In order to comply with the wishes of his colleagues on the governing body, that he should preside over their deliberations during the ensuing year, Mr. Pemberton resigned his position, as we briefly announced last week, as Queen's co-Professor of Surgery. The council signified their acceptance of the resignation in the following terms:—"That in accepting Mr. Oliver Pemberton's resignation of the chair of surgery, the council desire to record their sense of the great value of his services to the Birmingham School of Medicine for the long and unbroken period of nearly thirty years, as a college and clinical teacher, and particulary as Professor of Surgery for twenty-five years. The council hereby express their strong desire that Mr. Pemberton will consent to accept the position of an Emeritus Professor of Surgery in the College, in order that by this mark of well-deserved recognition and distinction his name may still remain connected with the medical school with which he has been for many years so intimately, usefully, and honourably associated."

IMPROVED STEAMSHIPS. — Improvements are gradually being introduced into the construction of steamers in order to render them more and more suitable for the conveyance of invalids in search of health in other climates. The *Nile*, a first-class mail and passenger steamer belonging to the Royal Mail Steam Packet Company, is a very fine specimen of a modern vessel. Accommodation is provided for 215 first class passengers, thirty-six second class and 350 emigrants. The ship is built of steel and is divided into eleven compartments by ten watertight bulkheads and will be lighted by electricity throughout.

THE LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.—At a meeting of the council of this society on Feb. 28th a large number of new members were elected, and it was announced that new districts had been formed in East Central London, Wandsworth and Plymouth. Several cases were reported in which the efforts of the society had been successful in checking illegal or unprofessional practice, and the secretaries were instructed to take action in other cases which were brought under the notice of the society. It was resolved that arrangements be made to hold a dinner after the annual meeting on June 1st, or on a subsequent Tuesday or Thursday in that month. Dr. Heron, on behalf of the Finance Committee, presented a satisfactory interim report of the financial position of the society.

ROYAL MICROSCOPICAL SOCIETY.—At the meeting of this Society on the 15th inst. an electric turntable was exhibited on behalf of Mr. Payne of Newcastle. It was of the ordinary pattern, having an electric motor fitted beneath the plate; the whole was caused to revolve by the current from a bichromate battery cell. Dr. W. H. Dallinger gave a brief description of Professor Bütschli's experiments on the so-called artificial protoplasm and said that he could not suppose that anyone looking at these forms would regard them as in any way allied to living matter. Other specimens were shown and short papers were read, after which Professor Bell introduced some remarks from the pen of Dr. G. M. Giles on Certain Cystic Worms which Simulate the Appearances of Tuberculosis. Dr. Hebb said he had never met in England with any worms such as those described in the paper. Professor Bell thought the observations of Dr. Giles were of considerable importance, because, if the large number of animals which were killed as being tuberculous were really not so, it might be possible to prevent their destruction. A paper by Dr. Stokes, On New Brackish Water Infusoria from the United States, was taken as read.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.—The quarterly meeting of this Association was held on the 9th inst. in the Medical Institution, Liverpool, under the presidency of Dr. Baker. Dr. Wiglesworth, Rainhill Asylum, read a paper on "General Paralysis occurring about the Period of Puberty." Up to the present time it has been commonly supposed that the disease came on only in adult life, but he cited cases which he had treated showing that adolescence was by no means exempt from general paralysis. A discussion followed, in which the facts and conclusions of Dr. Wiglesworth were confirmed.—Dr. F. St. John Bullen gave an account of the out-patient system now being practised at the West Riding Asylum, Wakefield, but he was unable to say whether the results were of a satisfactory character. From the discussion which took place, the system, on the whole, was not approved of.—Dr. J. Cumming Mackenzie read notes showing that it is possible for the Celtic Highlander to acquire general paralysis and allied neuroses at home, but at the same time he demonstrated that there was less general paralysis among the Celts than among the Saxons.—It was resolved to invite subscriptions in aid of the family of the late Dr. Ball, who died at Paris recently. In the evening the members and their friends dined together at the Adelphi Hotel, under the chairmanship of the President, Dr. Baker. Among those present were the mayor (Mr. R. D. Holt), Mr. W. S. Barrett, Mr. Thomas Snape, M.P., Dr. Glynn and several members of the profession residing in Liverpool. After the loyal toasts had been proposed by the chairman and duly honoured, Dr. Savage submitted "The Houses of Parliament." Mr. Thomas Snape, M.P., in responding, bore testimony to the self-sacrificing efforts of the medical staff of Rainhill Asylum, and suggested that it would be a very desirable thing to ask Parliament to empower the County Councils to supply funds for the training of nurses.

NOTES IN PARLIAMENT.

Parish Councils.

THE long-expected Bill dealing with parish councils has been introduced into the House of Commons by the President of the Local Government Board. Mr. Fowler had no difficulty in showing the anomalies of local government in rural districts and how any inhabitant might be governed by the vestry, the burial board, a highway board, the school board, the guardians and the quarter sessions. His proposal that parish councils should be constituted to replace existing administrations is the natural sequel to the passing of the Local Government Act of 1888, and upon these councils will devolve, if the Bill pass in its present form, certain important sanitary duties. Thus the council may provide recreation grounds and have power of utilising any water-supply within a parish, as well as powers to deal with ditches, drains, stagnant water and any matters likely to be prejudicial to health. At the present time it is the statutory duty of the district councils—Mr. Fowler says he hopes to make it more binding upon them—to see to the water-supply and to the sanitary requirements of every parish within their areas, and, as we understand it, the parish council is to have power of representation to the county council when the district council is in default. The details of the administration which is thus foreshadowed cannot be fully understood until the Bill is printed, and under these circumstances it is desirable to postpone any discussion of the subject. We shall therefore hope to revert to it very shortly.

The General Medical Council.

The accounts of the General Medical Council and Branch Councils and of the Dental Registration Fund, for 1892, have been presented to the two Houses of Parliament.

The Food and Drugs Act.

At the House of Commons on Wednesday a deputation from the committee of the Federation of Grocers' Associations in the United Kingdom waited upon Dr. Cameron, M.P., with reference to the Bill of which he has charge for amending the Sale of Food and Drugs Act of 1875. The deputation expressed general approval of the provisions of the Bill. They agreed that it was quite as necessary to deal with wholesale as with retail traders, and they submitted that the invoice of the wholesale trader should be regarded as a warranty so far as the retail trader was concerned. With regard to the provision as to the mixture of coffee with chicory, the members of the deputation, whilst appreciating its merits, were afraid difficulty might arise in getting magistrates to carry it out strictly. Dr. Cameron thanked the deputation for their sympathy and their promises of support. As to the percentage of water to be allowed in butter, he informed them that he had not been able to fill in any figures because of the great variety of practice in different parts of the country, both on the part of magistrates and of analysts. Evidence would be required to be taken on the point, and he hoped with this view that the Bill would be referred to a select committee. In promoting the Bill he was glad to find that he had the sympathy both of the traders and of the analysts. In such circumstances he looked confidently to the future. Before leaving the room the deputation thanked Dr. Cameron for receiving them.

Cholera Hospitals (Ireland) Bill.

In the House of Commons, on the 16th inst., this Bill passed through Committee and was read a third time.

Tuberculosis.

In reply to Mr. Field, Mr. H. Fowler said he was informed by the Secretary of the Royal Commission on Tuberculosis that it was impossible to fix the precise date of the termination of the work of the Commission and of the presentation of their report. It was hoped that the experiments now proceeding would have terminated by the end of April, and by the end of June, it was anticipated, the whole of the microscopical investigations would be complete and the reports of the subcommittees be in the hands of the Commission. The question of compensation would be reserved.

The Disposal of the Dead.

Dr. Cameron, who had given notice to move an amendment to the terms of the motion that a select committee be appointed to inquire into the sufficiency of the existing law as to the disposal of the dead, congratulated the Government on their decision to grant that committee, and said that in England alone 50,000 interments took place yearly without proper certificates of death being given.—Dr. Farquharson, who had arranged to second the amendment, joined his congratulations with those of Dr. Cameron, and would have been prepared to enforce the need of such an inquiry as that contemplated.

The Supply of Water to the Metropolis.

Mr. Stuart, on the order for the second reading of the East London Water Bill, moved the rejection of the measure, a course in which he was sustained, he said, by the decision of the London County Council. He maintained that the Bill was inopportune, since the report of the Commission on the whole subject of the metropolitan water-supply was likely to be quickly forthcoming.—Mr. Boulnois deprecated opposition to the Bill, and Mr. Mellor thought the House would incur grave responsibility by rejecting the measure at that stage. The House, however, testified its willingness to accept that responsibility by throwing out the Bill by a majority of 176 against 152.

Farcy and Glanders.

In answer to questions put by Mr. Foster, Mr. Campbell-Bannerman said that for the last five years the horses of the army had been free

from farcy and glanders as a result of good sanitary measures and precautions against contagion.—Speaking for his department, Mr. Gardner said he regretted that the London County Council had not fallen in with his views with regard to the justice of compensating local authorities for the slaughter of diseased animals in compliance with the order issued in September last. But he believed, nevertheless, that the enforcement of the other terms of the order had been attended with success, so that the number of affected animals had shown a considerable falling off. Under these circumstances he did not contemplate taking any further steps at present.

Vaccination.

Mr. A. C. Morton, Dr. Farquharson, and Mr. Picton severally put questions on the subject of the issue of the Vaccination Commission, and Mr. Asquith assured the hon. members that the Commission had presented an interim report which was characterised by unanimity. He should, therefore, be prepared to introduce a Bill at the earliest available opportunity—probably in the course of a few days.

Lunacy Certificates in Ireland.

Mr. Maurice Healy asked the Chief Secretary to the Lord Lieutenant of Ireland, with reference to the new practice recently introduced with regard to the transfer of dangerous lunatics from workhouses to district asylums in Ireland, whether hitherto as a preliminary to such transfer, an order was first obtained from two justices under the Act 30 and 31 Vic., c. 118, s. 10, on a certificate from the dispensary doctor; whether there had been any change in the law enabling this order and certificate to be dispensed with; whether it was the practice now to transfer such lunatics in the same manner as if they were harmless pauper lunatics—i.e., without a magistrate's order and on the certificate of the workhouse doctor merely, and on what authority this change of practice was based.—Mr. John Morley replied that he was informed that no such practice as the hon. member referred to had been introduced. As to the second paragraph, there had been no change in the law to this effect. As to the third, persons admitted to district asylums as dangerous lunatics required a committal order signed by two justices and a certificate by the dispensary medical officer. Of course, if the hon. member was aware of any case in which he was advised that there had been a departure from the law, he (Mr. Morley) would inquire into it.

Cases of Supposed Infectious Disease.

On the 20th inst. Mr. Macdonald drew attention, by a question addressed to the President of the Local Government Board, to a report which recently appeared in the public press wherein it was stated that last year, owing to mistaken diagnosis, 462 persons were removed to fever and small-pox hospitals, whereas none of these individuals were suffering from either of these diseases, and 102 of them had lost their lives in consequence of such removal.—Mr. H. Fowler said that 450 of the number above mentioned were cases in which admission was granted upon certificates which were afterwards found to be incorrect. The diseases from which those patients really suffered were ascertained by diagnosis after admission, and death ensued in 97 cases. It was utterly untrue that the deaths were due to the removal of the patients to the asylums.

County Medical Officers in Scotland.

Sir G. Trevelyan said, in reply to a question put by Dr. Farquharson, that by Clause 52 of the Local Government Act for Scotland it was enacted that it was for the county councils to determine whether or not their medical officers were to be debarred from private practice. In distributing the grant of £15,000 provided by Parliament amongst the counties of Scotland in aid of their medical expenditure it was made a condition by the Scotch Office that none of that grant should go to a county where the medical officer took private practice. Inasmuch, however, as Parliament clearly intended that the matter should be left to the discretion of the local body, he (Sir G. Trevelyan) had ceased to exact any condition with regard to the point in question. [This subject, it will be recollected, was dealt with by us in a leading article last week.]

Parish Councils.

On the 21st inst. Mr. H. Fowler introduced a Bill to make larger provision for local government in England and Wales and in furtherance of an implied understanding that the Act of 1888 needed more legislation to make it complete. The parish would be the primary unit of local administration in rural districts. The vestries would be abolished and the civil parish would be alone recognised and dealt with. In every parish of 300 inhabitants and upwards a council would be established which would appoint overseers of the poor. To this council the whole machinery of the Allotments Act would be transferred and new powers would be given to it. By the Bill a district council could delegate to a parish council any power which might be entrusted to a parochial committee under the Public Health Act. Parishes having a population under 300 inhabitants would be grouped with other parishes. This measure, if passed, would effect radical changes in the machinery by which parish affairs had hitherto been conducted. It met with great favour by the bulk of the members present and was read a first time.

Hours of Labour in Shops.

Sir J. Lubbock moved a resolution expressive of the opinion of the House that excessive and long-continued labour in shops is injurious to the comfort and well-being of persons engaged therein. He alluded to the legislation which had already been adopted in favour of factory workers and argued that shop assistants needed, and might claim, relief in the same direction. He enforced his plea by reference to the report of the Parliamentary committee appointed in 1886, the members of which were unanimously of opinion that an Act of Parliament was necessary to curb the evil attending prolonged labour in shops. The workers themselves for the most part approved and sympathised with the efforts put forth to shorten the hours devoted to such work, which had to be carried on often with defective light and in impure air. The motion was seconded by Mr. Bartley and was supported by several members. Mr. Asquith expressed his approval of the resolution, which was unanimously agreed to.

Working Men's Dwellings Bill.

On Thursday Mr. Wrightson moved the second reading of this Bill, which did not, he said, propose to aid a man financially except for the purpose of acquiring a dwelling for himself, and this result, he maintained, could be better achieved by the instrumentality of the State than by means of a building society.—Mr. H. Fowler, on behalf of the Government, offered no opposition to the motion, and the Bill was read a second time and referred to a committee.

Sale of Intoxicating Liquors.

The second reading of the Bill for the more effectual control of the liquor traffic was moved by Mr. Bolitho. By this measure it was proposed that a licensing authority should be established which should consist of not more than twelve members, and to whom should be transferred the powers at present exercised by the licensing justices.—The Marquis of Carmarthen pointed out certain differences between the measure under discussion and that introduced by the Government, and moved that the Bill be read a second time this day six months.—The Chancellor of the Exchequer said that in that Bill the licensing board would have the power not only to limit the number of licenses but to extinguish them. As far as the Government were concerned they cordially supported the second reading of the Bill. Other speakers followed, and in the end the debate was adjourned.

BOOKS ETC. RECEIVED.

ABEL, AMBR., Leipzig.
Abriss der Lehre von den Nervenkrankheiten. Von P. J. Möbius. 1893. pp. 188.

CHURCHILL, J. & A., New Burlington-street, London.
The Cardinal Symptoms of Urinary Disease; their Diagnostic Significance and Treatment. By E. H. Fenwick, F.R.C.S. Eng. Illustrated. 1893. pp. 354.
The Leeward Islands Medical Journal. Vol. II.; edited by H. A. A. Nicholls, M.D., F.L.S. 1892. pp. 156.

DORNAN, W. J., Philadelphia.
Transactions of the American Gynæcological Society. Vol. XVII, for the year 1892. pp. 493.

HEINEMANN, WM., London.
A Manual of Bacteriology. By A. B. Griffiths, Ph.D., F.R.S.E. 1893. pp. 348.

LONGMANS, GREEN & CO., London.
Clinical Lectures on Abdominal Hernia. By Wm. H. Bennett, F.R.C.S. With Twelve Diagrams. 1893. pp. 225. Price 8s. 6d.
Manual of Health and Temperance. By F. Brodribb, M.A., and Rev. W. R. Pym, M.A. 1893. pp. 168. Price 1s. 6d.

MACMILLAN & BOWES, Cambridge.
Some Lectures by the late Sir George E. Paget, K.C.B., M.D., F.R.S. Edited from MSS. With a Memoir by C. E. Paget. 1893. pp. 181.

PENTLAND, YOUNG J., Edinburgh and London.
Physical Diagnosis; a Guide to Methods of Clinical Investigation. By G. A. Gibson, M.D., D.Sc., F.R.C.P. Edin., and Wm. Russell, M.D., F.R.C.P. Edin. Second Edition. Illustrated. 1893.
Diseases of the Eye; a Practical Treatise for Students of Ophthalmology. By Geo. A. Berry, M.B., F.R.C.S. Edin. Second Edition. Illustrated. 1893. pp. 727.

RUEFF ET CIE., Paris.
Formulaire Gynécologique Illustré. Par le Dr. A. Auvard. pp. 112.
Formulaire Obstétrical Illustré. Par le Dr. A. Auvard. pp. 113.
État Mental des Hystériques; les Stigmates Mentaux. Par P. Janet. pp. 233.

SAMPSON LOW, MARSTON & CO., Fetter-lane, Fleet-street, London.
Essays by Sir Morell Mackenzie. 1893. pp. 306.

SOCIÉTÉ D'ÉDITIONS SCIENTIFIQUES, Paris.
Hygiène des Fiancés. Par Dr. Jaques Nattus. 1893. pp. 130.
Détermination Pratique de la Réfraction Oculaire par la Kératoscopie ou Skiascopie; application à l'Examen des Conscrits. Par le Dr. Billot. 1893. pp. 100.

STEINHEIL, G., Paris.
De l'Influence des Affections Nasales sur l'Appareil Respiratoire. Par Dr. F. Chabory. 1892. pp. 59.

STEVENS & SONS, Chancery-lane, London.
Oaths and Affirmations in Great Britain and Ireland. By F. A. Stringer. Second Edition. 1893. pp. 184. Price 4s.

STOCK, ELLIOT, Paternoster-row, London.
How to improve the Physique. By "Medicus." 1893. pp. 51.

SWAN SONNENSCHEIN & CO., Paternoster-square, London.
Charity Organisation Series. The Feeble-minded Child and Adult. With Tables, List of Books of Reference &c. 1893. pp. 152.

VOLTA BUREAU, Washington.
Notes and Observations upon the Education of the Deaf. With a Revised Index to Education of Deaf Children. By Joseph C. Gordon, M.A., Ph.D. 1892. pp. 90.

VOSS, LEOPOLD, Hamburg and Leipzig.
Das Augenleuchten und die Erfindung des Augenspiegels, dargestellt in Abhandlungen. By E. Brücke and others. 1893. pp. 154.

Les Trois Livres de Jérome Fracastor sur la Contagion, les Maladies Contagieuses et leur Traitement. Traduction et Notes; par L. Meunier, 1893 (Société d'Éditions Scientifiques, Place de l'École de Médecine, Paris).—State of New York: State Commission in Lunacy; Third Annual Report, 1891 (J. B. Lyon, Albany).—What is Efficient Vaccination? by Brigade-Surgeon Robt. Pringle, M.D. Edin.; reprint (C. J. Clark, Lincoln's-inn-fields, London, W.C., 1892).—Model Answers to Questions for Examination of Sanitar Inspectors, compiled from the Sanitary Record (The Proprietor, "Sanitary Record," 2, Lexham-gardens, London, W.); price 2s.—The Ophthalmic Review, March, 1893 (J. & A. Churchill, London); price 1s.—L'Opium: ses Abus; Mangeurs et Fumeurs d'Opium Morphinomanes; par le Docteur Ernest Martin (Société d'Éditions Scientifiques, Paris, 1893).—Le Bacterium Coli dans l'Infection Urinaire; par le Dr. Jules Renault, 1893 (Société d'Éditions Scientifiques, Paris).

Appointments.

Successful applicants for Vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward it to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week for publication in the next number.*

BARRETT, W. A. H., L.R.C.P. Lond., L.R.C.S. Edin., has been appointed Medical Officer for the Isolation Hospital, Guildford.

BROADHURST C. HENSON, L.R.C.P. Lond., M.R.C.S., L.S.A., has been appointed Resident Clinical Assistant to the St. Marylebone Infirmary, vice G. Thornton, M.D., resigned.

BROWNE, G. H., L.R.C.P., L.M. Edin., L.F.P.S. Glasg., has been reappointed Medical Officer of Health for the Brynmawr Urban Sanitary District.

BUTT, F. J., M.B., C.M. Edin., has been appointed Medical Officer for the North-Western Sanitary District of the Chester Union.

CARLING, ALBERT, L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer to the Bristol Dispensary.

CARSE, D. B., M.B., C.M. Edin., has been appointed Medical Officer for the Spotland Sanitary District of the Rochdale Union, vice Turner, resigned.

CLEGG, R., L.R.C.P., L.M., L.R.C.S. Edin., has been appointed Medical Officer for the Rishton Sanitary District of the Blackburn Union.

COLEMAN, F. J., M.B., B.S. Lond., has been appointed House Physician to Guy's Hospital.

DALDY, A. M., M.B., B.S. Lond., has been appointed Assistant House Physician to Guy's Hospital.

DATE, W. H., M.R.C.S., has been appointed Medical Officer for the Third Sanitary District of the Wellington (Som.) Union.

ELLIOTT, C. C., M.B., B.S. Lond., has been appointed Assistant House Physician to Guy's Hospital.

GOODRIDGE, A., L.D.S., R.C.S. Eng., has been appointed Honorary Dentist to the Dartmouth Cottage Hospital.

GRAHAM, C. W., L.R.C.P. Irel., has been appointed Medical Officer for the St. Cuthbert's Sanitary District of the Carlisle Union, vice Dowie, resigned.

HAMILTON, E. T. E., M.B., B.S. Lond., F.R.C.S., has been appointed House Surgeon to Guy's Hospital.

HILL, ERNEST, L.R.C.P. Lond., M.R.C.S., has been appointed Second Assistant Medical Officer to the Leavesden Asylum, Kings Langley.

HONEYWILL, S., L.R.C.P. Edin. & L.M., M.R.C.S., has been appointed Medical Officer and Public Vaccinator to the Bildeston District of the Cosford Union; also Medical Officer to the Cosford Union Workhouse, vice Growse, resigned.

HOPSON, MONTAGU F., L.D.S. Eng., has been appointed Assistant Dental Surgeon to Guy's Hospital.

HOW, A. B., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer for the Stradbroke Sanitary District of the Hoxne Union, vice Thomas, resigned.

HUNTLEY, E., M.R.C.S., L.R.C.P., has been appointed House Surgeon to Guy's Hospital.

LANDON, E. E. B., M.R.C.S., L.R.C.P., has been appointed House Physician to Guy's Hospital.

LUMSDEN, G., M.B., C.M. Glasg., has been reappointed Medical Officer of Health for the Pateley-bridge Rural Sanitary District.

MACAULAY, DONALD, M.A., M.B., C.M. Edin., has been appointed House Surgeon and Secretary to the Stamford, Rutland and General Infirmary, vice Crisp, resigned.

MILNER, ARTHUR E., M.R.C.S., L.R.C.P. Lond., has been appointed Physician's Assistant to the Bristol General Hospital.

PANTIN, C. S., M.B., B.S. Lond., has been appointed Assistant House Surgeon to Guy's Hospital.

REYNOLDS, F. M., M.B., M.S. Edin., has been appointed Medical Officer for the Fourth Sanitary District of the Honiton Union.

RUSSELL, J. L., M.B., M.S. Edin., has been appointed Medical Officer for the Stansfield Sanitary District of the Todmorden Union, vice Measures, resigned.

SELBY, WM., L.R.C.P. Lond., M.R.C.S., has been appointed Medical Officer of the Workhouse, Parish of Birmingham, vice Rowlands, resigned.

SNAPE, ERNEST, L.R.C.P. Lond., L.S.A., has been appointed Honorary Medical Officer to the Cripple's Home, Marylebone-road, W.

STONER, HAROLD, L.D.S. Eng., has been appointed Assistant Dental Surgeon to Guy's Hospital.

TAYLOR, T. R., M.B., B.S. Lond., has been appointed Assistant House Surgeon to Guy's Hospital.

TRESIDDER, WM. E., M.B., B.S. Lond., has been appointed Honorary Assistant Surgeon to the Nottingham Hospital for Women.

TREWBY, LILIAN, L.R.C.P. & S.E., L.S.A., has been appointed Physician in Charge to the Dufferin Hospital, Shikarpur, Sindh, India.

WEBB, F., L.R.C.P. Lond., M.R.C.S., has been appointed Honorary Surgeon to the Doncaster Infirmary and Dispensary, vice McKay, resigned.

WHICHER, A. H., M.R.C.S., L.S.A., has been appointed Medical Officer of Health to the Midsomer Norton Local Board.

WILLIAMS, HENRY, M.R.C.S., L.R.C.P., has been appointed Honorary Surgeon to the Nottingham Hospital for Women.

WILLOUGHBY, W. G., M.D. Lond., D.P.H. Camb., has been reappointed Medical Officer of Health for Plympton.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).

BOLTON INFIRMARY AND DISPENSARY.—Senior House Surgeon. Salary £120 per annum, with furnished apartments, board and attendance.

FLINTSHIRE DISPENSARY.—Resident House Surgeon. Salary £120 a year, with furnished house, rent and taxes free, also coal, light, water and cleaning, or, in lieu thereof, £20 per annum.

GENERAL INFIRMARY AT GLOUCESTER AND THE GLOUCESTERSHIRE EYE INSTITUTION.—House Surgeoncy. Salary £100 per annum, with board, lodging and washing.

HIGHWORTH AND SWINDON UNION.—Medical Officer and Public Vaccinator for District No. 1 of the Union. Salary £70 per annum, with the usual extra medical fees for midwifery and surgical cases, and also vaccination fees. Apply to the Clerk of the Guardians, Office No. 6, High-street, Swindon.

HOSPITAL FOR WOMEN (THE LONDON SCHOOL OF GYNÆCOLOGY), Soho-square, W.—Clinical Assistants.

HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST, Brompton.—House Physicians.

INGHAM INFIRMARY, South Shields.—Two House Surgeons (Senior and Junior). Salaries: Senior, £60, rising by instalments of £5 to £70 per annum; Junior, £50 per annum, each with board and residence.

LONDON HOSPITAL, Whitechapel, E.—Assistant Physician.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Dental Surgeon.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—Physicians for out-patients.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—Registrar and Pathologist.

NATIONAL HOSPITAL FOR THE PARALYSED AND EPILEPTIC (Albany Memorial), Queen-square, Bloomsbury.—Assistant Physician.

PARISH OF ST LEONARD, Shoreditch.—Second Assistant Medical Officer for the Infirmary, Hoxton-street, N., for six months. Salary £40 per annum, with rations, furnished apartments and washing in the Infirmary. Apply to the Medical Officer, 204, Hoxton-street, London, N.

POPLAR AND STEPNEY SICK ASYLUM DISTRICT.—Assistant Medical Officer for the Asylum at Bromley, Middlesex, E. Salary £130 per annum, with rations, furnished apartments and washing. Apply to the Clerk to the Managers, Bromley, Middlesex, E.

RADCLIFFE INFIRMARY, Oxford.—Surgeon, for two years. Salary £80 a year, with board, lodging and washing.

RICHMOND DISTRICT ASYLUM, Dublin.—Third Assistant Medical Officer and Pathologist (unmarried).—Salary £100 per annum, with furnished apartments and other allowances, valued collectively at £99 15s. 5d.

ROYAL HOSPITAL FOR CHILDREN AND WOMEN, Waterloo-bridge-road.—Resident Medical Officer. Salary £70 per annum, with board, lodging &c.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Junior Resident Medical Officer, for six months. Board, residence and washing provided.

ROYAL FREE HOSPITAL, Gray's-inn-road.—Senior Resident Medical Officer, for twelve months. Salary £100 per annum, with board, residence and washing.

UNIVERSITY COLLEGE, BRISTOL, MEDICAL SCHOOL.—Medical Tutor. Stipend £125 per annum.

VESTRY OF FULHAM.—Medical Officer of Health for the parish of Fulham. Salary £500 per annum. No further increase. Apply to the Clerk of the Vestry, Town Hall, Walham Green.

VICTORIA HOSPITAL FOR SICK CHILDREN, Hull.—Resident Medical Officer. Salary £50 a year, with board, rooms and washing.

WEST NORFOLK AND LYNN HOSPITAL, Lynn.—House Surgeon and Secretary. Salary £80 per annum, rising to £100.

YORK COUNTY HOSPITAL.—Assistant House Surgeon. Salary £40 per annum with board, apartments and washing.

Births, Marriages and Deaths.

BIRTHS.

BROOKS.—On March 16th, at Holywell, Oxford, the wife of Dr. Brooks of a daughter.

BUSHELL.—On Jan. 20th, at Pekin, China, the wife of Dr. S. W. Bushwell, Physician to H.B.M.'s Legation, of a son.

CADDY.—On March 16th, at Earl's-court-gardens, S.W., the wife of Duncan James Caddy, M.B., of a daughter.

DEWSNAP.—On March 15th, at Gloucester-road, South Kensington, the wife of William Frederick Dewsnap, M.R.C.S., L.R.C.P., of a daughter.

SMYTH.—On March 20th, at the Beeches, Shenley, Herts, the wife of R. V. Beatty Smyth, M.A., M.D., of a son.

MARRIAGES.

GODDARD—FRY.—On March 16th, at St. Mary's, Horsell, Surrey, Bertram Goddard, L.R.C.P., M.R.C.S., second son of Eugene Goddard, M.D., of Highbury New Park, N., to Charlotte, second daughter of George Fry, of Fockiesbrook, Chobham, Surrey.

PRICE—SMART.—On Feb. 27th, at Ramnuggur, John Dodds Price, M.R.C.S., L.R.C.P. Lond., District Medical Officer, Nowgong, Assam, to Jessie Eleanor, only daughter of the late William Colville Smart.

DEATHS.

ALLEN.—On March 17th, at his residence, Welbourne Hall, Lincoln Robert Marshall Allen, F.R.C.S., Deputy-Inspector-General of Army Hospitals, aged 73.

LAWRENCE.—On March 15th, at Liskeard, Cornwall, John H. Lawrence, M.R.C.S., aged 85.

MACKINTOSH.—On March 15th, at Morden Hall, Torquay, C. H. Mackintosh, M.D.St. And., M.R.C.S., Extra L.R.C.P.Lond., aged 85.

MANNING.—On March 20th, at Laverstock, Salisbury, Henry Charles, eldest son of Henry John Manning, aged 34.

SIBLEY.—On March 15th, at his residence, The Hermitage, White-hill, Bletchingley, Surrey, Septimus William Sibley, F.R.C.S., late of Harley-street, W., aged 62.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, March 23rd, 1893.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Dry Bulb.	Wet Bulb.	Solar Radia in Vacuo.	Maximum Temp. Shade.	Min. Temp	Rainfall.	Remarks at 8.30 A.M.
Mar. 17	29·82	N.W.	41	38	80	48	36	0.07	Bright
,, 18	30·13	N.W.	41	38	91	46	33	0.02	Cloudy
,, 19	30·46	N.W.	36	33	67	45	31	...	Hazy
,, 20	30·45	N.W.	34	33	77	53	32	..	Hazy
,, 21	30·40	S.W.	38	37	66	56	34	...	Foggy
,, 22	30·33	S.E.	41	40	78	55	38	..	Foggy
,, 23	30·29	S.E.	40	39	60	52	38	..	Foggy

Notes, Short Comments & Answers to Correspondents.

EDITORIAL NOTICE.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITORS," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this Office.

Lectures, original articles, and reports should be written on one side only of the paper.

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers, not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale and advertising departments of THE LANCET *should be addressed "To the Publisher."*

We cannot undertake to return MSS. not used.

PUBLISHER'S NOTICE.

IN order to facilitate the work of reference to the volumes of THE LANCET, we have arranged in the future to publish duplicate copies of the Index to each half-yearly volume in a form in which they may be subsequently filed or bound together.

We have had a large number of duplicate copies of the Index to the last half-yearly volume printed, and those of our subscribers who may wish to be supplied with loose copies can obtain the same (without extra charge) on making application to the Publisher of THE LANCET.

FOREIGN BODIES IN THE STOMACH.

DRS. CAREW AND WEIR publish notes of an unusual case of foreign bodies in the stomach, in the *Canadian Practitioner* for February. The patient, a man aged twenty-three, was an inmate of the Toronto Asylum. The tableware is always counted after meals and on Oct. 27th, 1892, the knife, fork and spoon used by this patient could not be found. He said that he had swallowed them, but was not believed. The knife measured 9⅛ in. long, blunt-edged, with a round point; fork, 7⅞ in. long, four-pronged; spoon, 5⅞ in. long—all silver-plated. Next day nausea was complained of, and the foreign bodies could be distinctly felt through the abdominal wall, and a distinct clinking noise could be heard. Operation was not permitted, and the patient died of peritonitis on Jan. 27th of this year, the result of perforation of the stomach by ulceration produced by the foreign bodies. At the post-mortem examination the stomach was found to be closely adherent to the ileum and transverse colon. The handles of the knife and fork could be felt passing down through the ileum from the point of adhesion, and their extremities lodged in the cæcum; the bowl of the spoon could be felt in the duodenum, and its tip had caused ulceration through the anterior wall of the duodenum, with a slit-like perforation into the peritoneal cavity three inches and a half from the pylorus. The point of the knife was engaged in the mucous membrane of the stomach a little below the lesser curvature in the anterior wall, and had caused some ulceration there. The points of the fork were free. The stomach showed marked chronic inflammation, also the duodenum; there was an area of ulceration of some depth in the latter where the edge of the bowl of the spoon rested, but this had not perforated like the tip. The lower end of the œsophagus showed superficial ulceration. The knife blade had been considerably eroded by the gastric juice, but the fork and spoon showed no damage beyond the loss of the silver plating. The patient complained of pain only twice and on each occasion only for a short time. The only sign locally of the peritonitis was extreme distension.

"SIMULTANEOUS AFFECTION OF THE LACRYMAL AND PAROTID GLANDS."

To the Editors of THE LANCET.

SIRS,—The annotation on simultaneous affection of the lacrymal and parotid glands at page 608 of THE LANCET of March 18th reminds me of a case I saw during a recent epidemic of mumps in this town. The patient, a lad about seventeen years of age, suffered from mumps affecting the right parotid mainly, and in a less degree the left. In a few days after the commencement of the attack the right testicle suddenly became painful and inflamed, the swelling of the parotids at the same time diminishing. Three days later the mother called my attention to a small firm swelling beneath the right upper eyelid towards its outer part, which was both painful and tender and was accompanied by profuse lacrymation and some injection of the vessels of the conjunctiva. At the same visit the orchitis was found to have greatly subsided. Cold compresses to the eyelid were ordered and the swelling rapidly disappeared. The idea crossed my mind at the time that this might be a case of mumps of the lacrymal gland, and I accordingly looked up such authorities as were at hand, but could find no light on the matter. The rarity of the cases recorded induces me to send you this brief account.

I am, Sirs, yours truly,

LEWIS E. PARKHURST, B.A., M.B., B.Ch. Oxon.

Brackley, Northamptonshire, March 18th, 1893.

THE CLIMATE OF AUCKLAND.

A CORRESPONDENT writes to us in praise of the climate of Lake Takapuna, near Auckland, from which he has derived great advantage as a sufferer from chronic bronchitis. From a combination of geographical and other causes the health-giving qualities of the locality in question are regarded by our correspondent as quite exceptional, and he regrets that no account of it has been made public in Europe. The greatest heat, about 80° in the shade, is always largely modified by a constant sea-breeze and a cool wind from the south blowing from the high mountains of Otago. The rainfall is about forty-nine inches and very evenly distributed during the year. The humidity of the region is so tempered that sufferers from bronchial affections are able to be out of doors almost all the year round. Frost is but rarely seen; the orange, the lemon and the guava tree flourish here in the open. Other advantages of the climate are enumerated and extolled by our correspondent, to which we have no space here to refer.

Mr. F. Sykes is thanked for his kind offer.

GLYCERINE SUPPOSITORIES.

To the Editors of THE LANCET.

SIRS,—The suppositories of glycerine mentioned by me in my recent article in THE LANCET can be procured at Mr. Morgan Richards', 46, Holborn-viaduct, London. They contain 95 per cent. of glycerine, and their price is, I believe, 1s. 9d. per dozen. They are made in two sizes, for children and adults. Would Mr. Marshall of Mitcham and others who have written to me about these suppositories be kind enough to take this letter as an answer to their queries?

I am, Sirs, yours faithfully,

Bristol, March 18th, 1893. JAMES D. STAPLE, M.R.C.S. &c.

STATISTICS OF POPULATION.

To the Editors of THE LANCET.

SIRS,—Can any of the readers of THE LANCET inform me whether there are any statistics or other reliable information published on the following points? 1. The number of children born to each married couple in England and Wales, if possible distinguishing (*a*) the upper and middle classes; (*b*) the sex of the population. 2. Out of the children born how many attain the age of twenty-one years?

I am, Sirs, yours truly,

Ladbroke-grove, W., March 21st, 1893. J. C. POLLOCK MUIR.

CHOLERA IN UPPER ITALY.

CHOLERA seems to have "cast a shadow before" in the sub-Alpine commune of Entraque, a neighbourhood numbering about 2600 inhabitants, some fifteen miles from Cuneo. The facts, so far as ascertained by our Rome correspondent, are the following: "On the 7th inst. an Italian workman, aged forty, of weakly constitution, had crossed the frontier from France and fell ill at Entraque. In a few hours, during which he was attended by the local practitioner, he died of what appeared to be distinctly pronounced cholera morbus. Thereupon the prefect, the Commendatore Alfazio, sent for Dr. Ambrosi, the 'medico provinciale,' who immediately took all steps for the isolation of the malady and proceeded to a necropsy, which confirmed the suspicions of the local attendant. The dejections, carefully preserved, were removed for analysis, the results of which are not yet made public. The Home Office also received telegraphic notice of the case, and the most rigorous surveillance was at once enforced at the frontier, the French side of which is said to be ill-provided from a hygienic point of view, and to be never without high rates of sickness and mortality. Unfortunately the case of the workman has not been singular. His mother-in-law, a woman of seventy, who nursed him, was also taken ill, and, after a brief course of precisely the same symptoms, died on the 12th. Dr. Ambrosi, having returned from an interview with the Commendatore Alfazio at Cuneo, is redoubling his precautions at Entraque, whilst strong detachments of carabineers and of the neighbouring Alpine regiments are vigilantly safeguarding all the approaches from France to Italy. Inspection and disinfection are practised on the minutest and most rigorous scale on all arrivals, and none are allowed to pass without a medical certificate of ascertained fitness to do so. At Entraque itself the Church of Sant' Antonio has been transformed into a lazzaretto, and no measures are spared to protect the country from such a visitation as that of 1884, which, though carefully 'hushed up,' was exceptionally severe, as the Piedmontese and Ligurian populations have every reason to remember."

IS THE "USUAL BOND" BINDING ON UNQUALIFIED ASSISTANTS?

To the Editors of THE LANCET.

SIRS,—Four years ago I was dispenser and did visiting for a medical gentleman, and at that time I had not done any hospital work, but I had attended some of the College lectures. I was asked to sign a document which was to the effect that I would not practise within a radius of three miles from the residence of my employer. I am now fully qualified and registered; and I wish to ask you if such a document as the one I signed, being then unqualified, and it being now four years since I signed it, no time having been specified therein, prevents me from commencing practice on my own account in that town? Or is such a document an everlasting bar to my practising there?

I am, Sirs, yours faithfully,

March 21st, 1893. L.R.C.P., L.R.C.S.ED., &c.

*** It is not possible to give a positive opinion without seeing the agreement, which we are inclined to think may be valid. Our correspondent should consult a solicitor.—ED. L.

THE PUBLICATION OF THE DETAILED CENSUS REPORT.

A CORRESPONDENT asks us for information as to the probable date upon which the public will be able to know the result of the Census which was taken two years ago. Volumes 1 and 2 of the Detailed Census Report will, we are informed, probably be presented to Parliament in the course of next month; Volume 3 (dealing with ages, birthplaces, occupations and infirmities) about midsummer; and Volume 4 (containing the general report and index) early in the autumn. We may point out that the Preliminary Census Report, issued in July, 1891, gave the unrevised results of the Census in counties, registration areas, municipal boroughs and all other sanitary districts and in all Parliamentary areas.

MENTAL SCIENCE AT THE UNIVERSITY OF LONDON.

To the Editors of THE LANCET.

SIRS,—I should esteem it a great favour if you would give me some idea of the best books to read for the examination in mental and moral science in the final M.D. examination at the University of London. So far as I can learn, the candidates always seem to be very much troubled in answering the questions on account of their not knowing what to read. I remain, Sirs, yours truly,

March 23rd, 1893. M.B.

*** (1) Savage or Clouston, on Insanity; (2) Ladd's Psychology; and (3) some special articles in Hack Tuke's Psychological Dictionary may be consulted.—ED. L.

Medical Diary for the ensuing Week.

Monday, March 27.

KING'S COLLEGE HOSPITAL.—Operations, 2 P.M.; Fridays and Saturdays, at the same hour.
ST. BARTHOLOMEW'S HOSPITAL.—Operations, 1.30 P.M.; and on Tuesday, Wednesday, Friday, and Saturday at the same hour.
ST. MARK'S HOSPITAL.—Operations, 2 P.M.; Tuesday, 2.30 P.M.
ST. THOMAS'S HOSPITAL.—Ophthalmic Operations, 2.30 P.M.; Friday, 2 P.M.
ROYAL LONDON OPHTHALMIC HOSPITAL, MOORFIELDS.—Operations, daily at 10 A.M.
ROYAL WESTMINSTER OPHTHALMIC HOSPITAL.—Operations, 1.30 P.M.; and each day at the same hour.
CHELSEA HOSPITAL FOR WOMEN.—Operations, 2 P.M.; Thursday, 2 P.M.
HOSPITAL FOR WOMEN, SOHO-SQUARE.—Operations, 2 P.M.; and on Thursday at the same hour.
METROPOLITAN FREE HOSPITAL.—Operations, 2 P.M.
ROYAL ORTHOPÆDIC HOSPITAL.—Operations, 2 P.M.
CENTRAL LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M., and each day in the week at the same hour.
UNIVERSITY COLLEGE HOSPITAL.—Ear and Throat Department, 9 A.M.; Thursday, 9 A.M. Eye Department, 2 P.M.
MEDICAL SOCIETY OF LONDON.—8.30 P.M. Dr. C. E. Beevor: A case of Aphasia due to a Fall on the Head.—Dr. F. Hawkins: Croupous Pneumonia in Children.

Tuesday, March 28.

GUY'S HOSPITAL.—Operations, 1.30 P.M., and on Friday at the same hour. Ophthalmic Operations on Monday at 1.30 and Thursday at 2 P.M.
CANCER HOSPITAL, BROMPTON.—Operations, 2 P.M.; Saturday, 2 P.M.
WESTMINSTER HOSPITAL.—Operations, 2 P.M.
WEST LONDON HOSPITAL.—Operations, 2.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Skin Department, 1.45; Saturday, 9.15.
ST. MARY'S HOSPITAL.—Operations, 1.30 P.M. Consultations, Monday, 2.30 P.M. Skin Department, Monday and Thursday, 9.30 A.M. Throat Department, Tuesdays and Fridays, 1.30 P.M. Electrotherapeutics, same day, 2 P.M.

Wednesday, March 29.

NATIONAL ORTHOPÆDIC HOSPITAL.—Operations, 10 A.M.
MIDDLESEX HOSPITAL.—Operations, 1.30 P.M.; Saturdays, 2 P.M. Obstetrical Operations, Thursdays, 2 P.M.
CHARING-CROSS HOSPITAL.—Operations, 3 P.M., and on Thursday and Friday at the same hour.
ST. THOMAS'S HOSPITAL.—Operations, 1.30 P.M.; Saturday, same hour.
LONDON HOSPITAL.—Operations, 2 P.M.; Thursday and Saturday, same hour.
ST. PETER'S HOSPITAL, COVENT-GARDEN.—Operations, 2 P.M.
SAMARITAN FREE HOSPITAL FOR WOMEN AND CHILDREN.—Operations, 2.30 P.M.
GREAT NORTHERN CENTRAL HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 1.30 P.M. Dental Department, 9.30 A.M. Eye Department, 2 P.M.
ROYAL FREE HOSPITAL.—Operations, 2 P.M., and on Saturday.
CHILDREN'S HOSPITAL, GREAT ORMOND-STREET.—Operations, 9.30 A.M. Surgical Visits on Wednesday and Saturday at 9.15 A.M.

Thursday, March 30.

ST. GEORGE'S HOSPITAL.—Operations, 1 P.M. Surgical Consultations, Wednesday, 1.30 P.M. Ophthalmic Operations, Friday, 1.30 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M. Ear and Throat Department, 9 A.M. Eye Department, 2 P.M.

Friday, March 31.

ROYAL SOUTH LONDON OPHTHALMIC HOSPITAL.—Operations, 2 P.M.
UNIVERSITY COLLEGE HOSPITAL.—Eye Department, 2 P.M.

Saturday, April 1.

UNIVERSITY COLLEGE HOSPITAL.—Operations, 2 P.M.; and Skin Department, 9.15 A.M.

During the week marked copies of the following newspapers have been received:—*Daily Argus, Westminster Gazette, News, Morning, Truth, Leeds Mercury, Bristol Mercury, Liverpool Daily Post, Yorkshire Post, Port Elizabeth Telegraph (Cape of Good Hope), Manchester Examiner, Scotsman, Weekly Free Press and Aberdeen Herald, West Middlesex Standard, Local Government Chronicle, Hertfordshire Mercury, Mining Journal, Reading Mercury, City Press, Surrey Advertiser, Local Government Journal, Leicester Post, Agnostic Journal, Public Opinion, Scottish Leader, West Middlesex Advertiser, Coventry Times, Spalding Free Press, Le Temps (Paris), Times of India, Pioneer Mail, Littlehampton News, Poole Herald, Norfolk News, Alfreston Journal, Torquay Times, Citizen, Bombay Gazette, Sun (Melbourne), Dundee Advertiser, Indian Mirror, Sunday Times, Builder, Architect, Worcester Daily Times, Harrow Gazette, Woolwich Gazette, Halifax Evening Courier, Cambrian (Swansea), Western Daily Press, Essex Telegraph.*

COMMUNICATIONS not noticed in our present issue will receive attention in our next.

Communications, Letters &c. have been received from—

A.—Dr. J. McCall Anderson, Glasgow; Dr. J. Althaus, London; Dr. A. G. Auld, Glasgow; Mr. T. T. Allt, Beckley; Amicos, London; Ajax, London; Æsculapius, Bristol.

B.—Dr. E. Blake, London; Dr. B. Barnard, Cardiff; Mr. J Bellamy, London; Mr. Stanmore Bishop, Manchester; Dr. Fletcher Beach, Sidcup; Mr. G. S. Bigg, London; Mr. E. Brandt, Paris; Mr. A. T. Bremner, Leicester; Commander Blount, R.N., Chelsea; Mr. W. G. Bunn, London; Mr. C. Birchall, Liverpool; Messrs. Blakiston and Co., Philadelphia; Messrs. Burroughs and Wellcome, London; Messrs. Brown, Gould and Co., London.

C.—Dr. M. Charteris, Glasgow; Dr. R. H. Coombs, Bedford; Mr. J. Cornish, Manchester; Mr. F. H. Peery Coste, London; Croton, London; Christopher.

D.—Mr. W. Drewitt, Kingston-on-Thames; Surgeon-Major D. C. Davidson, Bombay; Mr. A. Duke, Cheltenham.

E.—Edinburgh School of Medicine.

F.—Messrs. Foster, Brown and Co., Montreal; Forceps, London.

G.—Dr. C. Gowan, Manchester; Mr. Henry Green, Preston; Mr. W. George, Prestonville; Mr. Musgrave Graven, Kendal; G.; Gloucester General Infirmary.

H.—Dr. M. K. Hargreaves, London; Mr. Hornibrook, London; Mr. J. Heywood, Manchester; Mr. C. Hitchcock, Market Lavington; Mr. F. Garret Horder, Cardiff; Mr. J. Harrold, London; Hereford; H. T. W.; Hospital for Women, Soho-square.

I.—Inquirer; Ingham Infirmary, South Shields.

J.—Jaeger Sanitary Woollen Co., London.

K.—Dr. G. Kothe, Friedrichroda; Mr. J. P. Kirby, Swindon; Kappa.

L.—Dr. Wm. Lauder, Manchester; Mr. H. A. Lawson, Longford; Mr. A. J. Lawrence, Rugby; L., Sheffield; London Temperance Hospital; Leicester Trained Nurses' Institution.

M.—Dr. Albert Mills, Brussels; Dr. Thornton Macklin, Scilly; Mr. R. Mosse, London; Mr. C. E. March, Croydon; Messrs. Mitchell and Co., London; Messrs. McMillan and Co., London; M., London; Maltine Manufacturing Co., London; M. B.; Mason College, Birmingham, Secretary of; M.R.C.S.E.

N.—Mr. A. Norman, Bedford.

P.—Dr. Douglas Powell, London; Mr. Peck, Ormskirk; Prince's Hall, Piccadilly, Secretary of.

R.—Dr. Wm. Robertson, Newcastle-on-Tyne; Dr. Beaven Rake, Trinidad; Dr. J. J. Ridge, Enfield; Mr. A. G. Rolland, Ashton-under-Lyne; Mr. R. Redpath, Newcastle-on-Tyne; Messrs. Robertson and Scott, Edinburgh; Rotherham Hospital and Dispensary; R. J. F.

S.—Dr. Herbert Snow, London; Dr. C. L. Swaine, Beran; Dr. W. Sandford, Cork; Dr. Short, Birmingham; Dr. Sewell, London; Mr. A. Souza, Bombay; Mr. J. Swoll, Gildersome; Messrs. G. Street and Co., Cornhill; Student, Eastbourne.

T.—Mr. T. W. Twyford, Hanley; Mr. W. Scott Thomson, London; Messrs. Thomson, Brooks and Danby, London, Teufel Remedial Appliances Co., London.

V.—Mr. J. W. Vickers, London; V. C., London.

W.—Dr. S. White, Sheffield; Dr. F. J. Waldo, London; Mr. J. T. Willington, Macclesfield; Mr. E. Wright, Mollington; West Norfolk Hospital, King's Lynn.

Y.—York County Hospital.

Letters, each with enclosure, are also acknowledged from—

A.—Mr. W. E. Allen, Cardiff; Messrs. Allen and Hanburys, London; Aberdonian, London; Akyab, London; A. B. C., Leeds; A. O. F., London; A.B.C., London; Achilles, London.

B.—Mr. C. S. Breck, New York City; Mr. W. S. Battiss, Southsea; Mr. M. N. Byrn, Weaverthorpe; Mr. H. Butterfield, Northampton; Messrs. Brown and Co., Salisbury; Brunston, Shepherd's-bush; Bordesland, London.

C.—Dr. C. Cochrane, Basingstoke; Mr. R. Collins, Dockhead; Mr. J. Cochrane, Greenock; Mr. J. Chivens, Ruardean; Mr. H. J. Caplon, Bayswater; Mrs. Choat, Brading, I.W.; Cosmo, London; Car, London; Class Rooms, Edinburgh; Corinth, London, Cantab., Carlisle.

D.—Dr. G. W. Davis, Sidcup; Dr. H. Davies, Llanrwst; Mrs. Danby, Lincoln; Messrs. A. De St. Dalmas and Co., Leicester; Desdichado, London; Devon and Exeter Hospital.

E.—E. R. H. G., London.

F.—Dr. A. F. A. Fairweather, Pocklington; F.R.C.P., London; F. L. S., London; Fidelis, London.

G.—Dr C. Godson, London; Dr. J. Grant, Napanee, Ontario, Canada; Mr. R. F. Granger, Whitby; Mr. A. G. Gipps, China Station; Mr. E. B. Granger, Skipton; General London; Glamorgan County Council; Genuine, London.

H.—Dr. C. Hill, Barnsbury; Dr. H. Hicks, Hendon; Mr. J. S. Heath, Cardiff; Mr. Hall, Gravesend; Mr. C. N. Hewett, Minnesota, U.S.A.; Hull Law Stationery Society; H. C. V., London; Hull Royal Infirmary.

J.—Mr. D. Johnston, Small Heath; Mr. H. W. Jones, Llanrwst; Mr. G. R. Jesse, Macclesfield; Jessop Hospital for Women; J. C., Burton-on-Trent.

L.—Mr. W. W. Leigh, Treharris; Mr. C. Lamplough, Leamington; Lex, London; Longford Wire Co., Warrington; Leeds Trained Nurses' Institution; Locum, Lincoln; L.R.C.P., Stockton-on-Tees.

M.—Mr. A. L. Martin, Cornwall; Mr. M. M. McCarthy, co. Cork; Mr. R. P. McWatter, Armagh; Mr. F. McDougall, Runcorn; M., London; Medicus, Westbourne-park; M.D., Brighton; Medicus, Chester; M.A., London; M.B., Winchester; Medicus, Newport, Salop; Medicus, Cheetham.

N.—Dr. J. S. M. Nurse, St. Kitts, W.I.; National Hospital for the Paralysed, Bloomsbury.

O.—Mr. C. M. O'Brien, Bowes-park.

P.—Mr. Pritchard-Airey, Llangefni; Mr. J. Procter, Great Berkhamsted.

R.—Dr. D. T. Richards, Risca; Dr. T. H. Redwood, Rhymney; Mr. H. S. Reynolds, Hendon; Messrs. Rees and Latham, West Bromwich.

S.—Mr. J. Swale, Leeds; Messrs. Sharp and Co., Glasgow; Messrs. Squire and Sons, London; S. H., London; Sanitas, London; Stamford Infirmary.

T.—Mr. J. Thin, Edinburgh; Miss L. Trewby, Sindh; Mrs. Theobald, Leicester; Mrs. Tyte, Minchinhampton; Thames, London; T., Oldham.

U.—141, Upton-lane, Forest-gate.

W.—Dr. I. J. Weatherbe, Edinburgh; Mr. T. S. Wise, Rotherham; Mr. T. Williams, Anglesea; Mr. J. E. Williams, Oswestry; Messrs. Wright and Co., Bristol; Messrs. Wilson, Hartnell and Co., Dublin; Wales, London; W., London.

X.—X., London.

Y.—York, London.

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REPORT OF THE LANCET COMMISSION

APPOINTED TO INVESTIGATE THE SUBJECT OF THE

ADMINISTRATION OF CHLOROFORM

AND OTHER ANÆSTHETICS

FROM A CLINICAL STANDPOINT.

As mentioned in the introductory portion of this report, the basis of the statistics set forth is the series of cases, a portion of which we publish, with as full particulars as it is possible to produce in tabular form. The cases are those in which death has occurred when chloroform was being administered and when the death was apparently due to the direct influence of the drug and was so regarded by those who reported the occurrence. It has been thought advisable to divide these cases into three Series. In the first series (Series A) the deaths include those which occurred between the years 1848 and 1860. This series corresponds with the record of fatalities reported by the Special Committee of the Royal Medical Chirurgical Society published in vol. xxix. of the Second Series of their Transactions in 1864 (p. 323 *et seq.*). It was, however, found necessary, in order to render this series more complete, to examine the journals and other published records of cases and to collate the facts so obtained with those furnished by the Royal Medical and Chirurgical Society's Transactions. Special assistance was obtained by the examination of Dr. Snow's volume, which, besides giving very full records of cases, furnished incisive criticisms and comments which suggested a further search for information The second series (Series B) comprises the record of cases obtained from published accounts of fatalities which occurred between 1860 and 1891. The sources of information for these were the current medical literature and records afforded us in the shape of answers sent in to us in reply to our circular by medical practitioners both in the United Kingdom and abroad. The utmost attention has been paid to tabulating the records and in most instances several accounts of each fatality have been consulted and the essential particulars taken from them so as to form as full and connected a narrative as possible. The amount of information to be obtained varies very considerably, it being full to redundancy in some instances, but most meagre in others. It has, however, been thought advisable to maintain the sequence by inserting the cases even when only the mere fact of the death has been notified. In the instances in which the deaths were reported to us by practitioners we have regarded the communication as a private one, in accordance with the terms of our forms, and have omitted from our published report the name of the patient and that of the medical man. In the third series (Series C) are included (1) the cases of fatalities which had occurred in private practice under chloroform reported by medical men on the smaller form sent out with THE LANCET inquiry; (2) similar cases supplied by hospital authorities on the larger form.

The first column in the tabular matter which we publish contains a number which refers to the original lists, thus affording a means of substantiating the authenticity of the record. The first series comprises 86 cases, the second series 589 and the third 27. The headings "Age" in the second and "Sex" in the third column need no special comment.

In the fourth column the nature of the operation and the duration of the period of administration of the chloroform are given. We have already pointed out the importance of affording due consideration to possible factors in determining a fatal result to chloroformisation, instancing the assumed danger of some operations when of a nature to give rise especially to shock. The importance of considering the duration of the narcosis is evident when we remember that cooling of the patient's body, after-effects such as sickness, the phenomena which many authorities, grouping together under the term "shock," believe to be the direct result of the action of the anæsthetic, are proportional to the time the patient is exposed to the influence of the chloroform. The duration is taken as representing the period of time between the commencement of the inhalation until the death of the patient, or, perhaps more correctly, until the commencement of measures adopted with a view of resuscitating the patient.

The next column is occupied with information concerning the nature of the anæsthetic and the method of employing it. Here we regret to have to draw attention to the loose way in which the "method" employed has been, as a rule, described. A detailed and exact definition of the method employed in every case of death under chloroform would probably lead to valuable criticism from those constantly engaged in the use of anæsthetics, and errors or slight inaccuracies of technique might be pointed out which would possibly save a repetition of errors sometimes immediately responsible for the fatality.

In the sixth column the question of pulse (P) and respiration (R) is considered with regard to which failed first. Thus, when the reports furnished to us state that the respiration failed before the pulse, this is notified in the column by the letter R. When the pulse is said to have ceased before respiration, it is represented by P, whilst when respiration and pulse are reported as stopping simultaneously, it is explained by the sign R and P. When doubt existed as to which failed first, a note of interrogation is used or placed before the letter P or R, according as the report said "probably" the pulse or the respiration failed first. Full allowance has been made for the difficulty of obtaining accurate information on this point, in the excitement of an impending death under chloroform, but the large number of cases examined possibly helps to eliminate errors of observation. Again, the liability to error most likely tells as much against one set of observations as against the other.

In the column dealing with the symptoms occurring under the anæsthetic as full but succinct an account of the whole case is given as the material at hand permitted.

In the eighth column the assigned cause of death is recorded and an attempt made to inquire into the indirect or adjuvant causes. In this column, also, is included a very brief account of the post-mortem appearances when a necropsy took place and was reported to us. Although these notes are very short it is believed that they include all the salient points. In some cases it will be noticed that the estimation formed of the patient's condition before the anæsthetic is in marked contrast with what the necropsy revealed.

In the ninth column, under the heading of "Remarks," are included facts which bear upon the general state of health of the patient at the time of the administration which might indicate a predisposing cause for his death under the anæsthetic. It is not for a moment contended that these records supply sufficient data for complete answers to the problems which the subject presents, but it is hoped that they may assist in obtaining a more thorough and intimate knowledge of the subject. When the full records have been published and the other anæsthetics have been considered in a similar way, it is proposed to offer some further remarks in which the various agents employed in producing anæsthesia and their effects will be compared.

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860.

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
1	15	F	Removal of toe-nail (½ minute).	Handkerchief. 1 dr.		Anæsthesia incomplete. Became blanched; spluttered as in epilepsy; never rallied.	P.M. Stomach was distended with food. "Syncope" (Snow.)	Snow believed induction of anæsthesia was in this case too rapid.
2	35	F	Extraction of teeth (1 minute).	Dr. Morton's Ether Inhaler.* Large quantity.	P.	Operation nearly completed. Arms became rigid. P. ceased after being feeble; R. ceased about same time. Became livid. Death in 3 minutes.	Syncope. P.M. Nothing very remarkable save fluidity of blood.	Remarks as in previous case.
3		M	Fistula in ano (1 minute).	Towel or handkerchief. ½ dr.	P.	Anæsthesia incomplete (?). Showed slight symptoms of feeling pain. The P., which was full and natural, sank. Death in 1 minute.	"Overdose" in way given (Snow). P.M. Heart enlarged, pale and soft.	Had had chloroform before. Was placed on his side.
4		F	Opening a sinus in thigh.	Handkerchief, 3 to 4 dr.		Put up her hand and said "I choke." Face immediately became pale; breathing embarrassed. Foamed at mouth. Anæsthesia incomplete. Death in 1 minute, probably before operation commenced.	P.M. Heart pale and friable.	Among measures adopted for resuscitation, was forcible inflation of lungs; this caused permanent distension of air cells.
5	?	F	Amputation of middle finger.	Handkerchief, 1 dr.	P. & R.	"Coughed a little; then gave a few convulsive movements." Anæsthesia incomplete. Death probably before operation commenced, probably in 1 or 2 minutes.		
6	22	M	Cautery to wrist.	Apparatus.		Death in 5 minutes.		
7	34	M	Amputation at hip for bullet wound.	Apparatus.		Breathing became stertorous and then very feeble; countenance livid; eyes turned upwards; P. had ceased. Artificial R. seemed to revive him and P. was again felt; he relapsed, however, and died. Death on re-application of $CHCl_3$ when sensibility was returning.		
8	13	M	Extraction of teeth.	In ether apparatus.		Hands fell down and head fell on chest. Artificial R. but no recovery. Incomplete anæsthesia. Operation not commenced.		
9	?	M	Operation on great toe.			Operation not commenced.		
10	17	M	Phimosis and for hæmorrhoids.	Napkin. 3 dr.	P.	Operation completed. Complete anæsthesia. Face and neck became livid; eyes turned upwards; P. imperceptible at wrist; and whole body relaxed. After 2 or 3 gasps he ceased to breathe. Death in 10 minutes.	Syncope. P.M. Heart large and flabby; lungs a good deal "congested."	Had inhaled $CHCl_3$ before. Some of same chloroform had been used for another patient without bad effects.
11	17	M	Amputation of finger, 5 minutes.	Dropped on gauze laid on face, 2 dr.	P.	He struggled for a moment, then after a quarter of a minute the P. ceased to beat; countenance altered. Action of heart had ceased and the sounds could not be heard. R. still continued, but became irregular, weak and slow; and at length ceasd completely in space of ½ minute. Attempts made to restore R., and in 2 minutes again commenced, but P. did not return. Death in 6 minutes, during stage of excitement.	Syncope (Snow). P.M. Vena Cava overfull of black blood.	Snow thinks an overdose was taken when the patient struggled.
12	36	M	Amputation of toe.	Handkerchief, ½ oz.		Anæsthesia complete. At close of operation no blood escaped when pressure was removed from arteries; patient was, in fact, dying, and in a short time expired. A few inspirations were noticed after P. had ceased at wrist.	P.M. Some venous engorgement of lungs, heart flabby.	Death probably due to way the $CHCl_3$ was given (Snow).
13		F	Extraction of tooth.	Handkerchief.	P.	As she did not become insensible more $CHCl_3$ was placed in handkerchief. She drew one deep inspiration; countenance immediately became pallid; dilatation of pupils, convulsive rolling of eyes, no P. could be felt.	"Paralysis of heart by overdose."	The inspiration at the moment the fresh supply of chloroform was given probably induced intaking of a lethal dose (Snow). Pt. was sitting.
14	48	M	Removal of toe nail.	Inhaler. About ½ dr.	P. & R.	Anæsthesia complete. Continued insensible after operation; face becoming dark, P. small, quick; R. laborious. After struggling for a minute became still. R. continued a few seconds after P. ceased. Artificial R. produced no effect.	Probably asphyxia (Snow).	
15		F	Excision of eye-ball.	Sponge. Small dose.	P.	Probably fully under. Died suddenly during operation.	Syncope.	"Vapour not sufficiently diluted" (Snow).

* Consists of glass globe containing a sponge on which the chloroform was poured to saturation. The globe was 4½ inches across, and the sponge filled one-third of it.

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
16	20	F	Extraction of tooth.	Sponge and napkin.	? P.	Died suddenly, stretching herself out and frothing at the mouth at moment of death, countenance at same time becoming livid.	Syncope.	Operation seems to have been attempted several times at intervals unsuccessfully. Died when inhaling $CHCl_3$ for 6th time.
17		M		Sponge. 1 dr.	? R.	During stage of excitement, made a stertorous inspiration; and this occurred several times, until at length R. ceased entirely not. (No report of P.) Operation probably not commenced.	"Probably syncope."	
18	24	F	Amputation of finger.	Handkerchief. 1 dr.		Operation probably completed. After $CHCl_3$ was discontinued, face turned pale, and P. and R. ceased.	Syncope. P.M. showed Pt. to be emphysematous.	
19	30	M	On testicle.	Cotton and folded towel. About 2½ dr.	P.	Some struggling on breathing fresh $CHCl_3$ Towel removed, but, patient not being insensible, again applied. After a few inspirations P. ceased, face turned pale, breathing slow and gradually ceased. Death in 5 minutes. Operation not commenced.	Cardiac syncope. Breathing returned for a time after the employment of artificial respiration. P.M. showed old standing disease of membranes of brain. Syncope.	
20	7 or 8	M	Sounding for stone.	On lint.	P.	Insensible, moaning. Countenance livid, eye vacant. Heart pulsation ceased. Made one deep gasp, and was to all appearance dead. Artificial R. no result.		
21	34	M	Amputation of portion of hand.	Inhaler, then napkin.	P.	During operation hæmorrhage suddenly ceased, and he expired.	Syncope. P.M. Heart flabby, some congestion of brain membranes.	See Snow p. 152.
22	24	M	Amputation below knee for scrofulous disease of ankle.	Lint and towel, with sponge, laid on face. About 1½ dr.		Slight convulsive movement of eyelid, froth at mouth, and he was dead. Operation not commenced. Death in about 1 minute.	Syncope.—From commencement of administration to death only one minute elapsed.	Patient greatly debilitated.
23		M	On penis.	Chloroform, 1 dr.		Died suddenly.	Syncope.	
24	36	M	Extraction of teeth.	Handkerchief.		After extraction of some teeth, she died suddenly in less than 1 minute from commencement of the inhalation.	Syncope—Pt. was emphysematous.	The administrator was prosecuted for homicide but acquitted.
25	45	M	Removal of testicle.	Linen cloth. About 1½ dr.	P. & R.	Fully under influence. During operation, hæmorrhage from artery suddenly ceased. R. ceased almost instantaneously with heart's action, but one or two sigh-like inspirations followed. With artificial R. there were several attempts at natural R. Death after more than 7 minutes.	? Syncope (Snow). P.M. Fulness of veins —fibrinous clot in pulmonary artery.	
26	37	F	Removal of impacted fæces. (Cancer of uterus.)	Probably handkerchief. 10½ dr.		On completing operation the surgeon found that she had ceased to breathe. She was fully under anæsthetic. Death in 8 or 9 minutes.	? Syncope. Symptoms do not appear to have been observed.	
27	23	M	Ligature of arteries, aneurism in leg by anastomosis.	Apparatus.		Operation commenced. P. suddenly ceased as soon as skin incision was made; $CHCl_3$ removed, but in a few seconds patient had ceased to breathe. With artificial R. the act of R. was performed several times, and the circulation was thought to be returning, but this was only due to appearance of face; no pulse returned, but he quickly relapsed and died. Death in 5–10 minutes.	Syncope. P.M. Venous engorgement.	
28	32	F	Extraction of tooth.	Sponge and handkerchief. 25 drops.		Only 4 or 5 inspirations. Operation not commenced. On being asked a question, answered in a thick and trembling voice. At same time stretched out her limbs; face became bluish; eyes haggard; head and arms fell; she was dead.	Syncope.	Was in sitting posture.
29	73	M	Lithotrity.	Snow's Inhaler.		Operation commenced. Fully under. Fresh $CHCl_3$ given as signs of returning consciousness appeared. Appeared to hold his breath; P. had then ceased, the heart sounds were still heard feebly. Made several further inspirations and then ceased to breathe. Artificial R. produced no result.		
30		M	Fistula in ano.	Handkerchief. About 1 dr.		Not fully under; operation not commenced. On applying fresh $CHCl_3$ he spluttered at mouth. $CHCl_3$ was removed, but he suddenly expired. Death in about 1 minute.	Syncope.	

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
31		M	Application of potassa fusa to ulcers.			Fully under. When nearly completing operation a sort of catch in breathing on looking at him, mouth and eyes open and turned upwards; breathing irregular; face pale, and pupils dilated. Artificial R. had no effect. "In a few minutes the man died."	Probably syncope.	
32		M	Removal of malignant tumour of the thigh (12 minutes).	Inhaler.		Fully under. $CHCl_3$ acted slowly. During operation breathing became slow; seemed to be sinking fast, gave one strong gasp, and then died.	Probably syncope.	
33	28	F	Application of nitric acid to sloughing ulcers.	Lint.		Operation not commenced. During stage of excitement, a partial relaxation of the limbs took place, became insensible and pulseless.	Syncope.	
34		F	Tumour of face.	Compress.		Stage of excitement. During operation had cough; made a deep inspiration, then a convulsive movement of face and hand. P. and heart had ceased.		
35		M	For hæmorrhoids.			Fully under. Operation not commenced. R. became embarrassed; there was trismus; then the movements of heart ceased. With insufflation, and then with electricity he breathed irregularly for 20 minutes. There was, however, no evidence of restored action of the heart. Death in less than 5 minutes.		Patient suffering from aneurism of the aorta.
36	25	M	Removal of tumour near lip.	Sponge. 5 dr.		Fully under. Operation commenced. Became pale, R. suspended, sank into state of complete collapse. Artificial R. produced no effect. Death in about 4 minutes.	Syncope.	
37	43	M	Perineal section.	Handkerchief. About 1 oz.	P.	Fully under. Operation not commenced. Had slight convulsion; rallied and continued $CHCl_3$; P. became weak and ceased. Breathing did not cease before P. Artificial R. restored a few natural Rs. but this did not continue.	Syncope.	
38	40	F	Strangulated hernia.	Lint. Less than 2 dr.		Operation not commenced. Struggled much; commenced to breathe with loud, rough stertor; P. was gone, gave several inspirations, then ceased. With artificial R. and galvanism gasped about 3 times. After this no further signs of life.	"Simultaneous deep coma and cardiac syncope."	
39	22	F	Application of actual cautery to cancroid sore.	Inhaler. About 2½ dr.		Fully under. Operation not commenced. P. became extremely weak and fluttering; countenance dusky; R. at long intervals with slight catching efforts. All efforts at R. ceased about 2 minutes after 1st indication of failure; P., however, as a very feeble flutter, was felt occasionally for at least 2 minutes later.	Syncope.	
40	19	M	Extension of anchylosed knee.	Inhaler. Chloroform, 1 dr.		Probably not under influence. Operation not commenced. P. became feeble and undulating; trismus occurred; R. became irregular, face livid; foamed at mouth. Only once made feeble attempt at R. Death in less than 1 minute.	Syncope.	
41	13	F	Lipoma on back.	1 dr.		Fully under. Operation commenced. Fell suddenly forward on chest. Attempts made to restore her; but in a few minutes it became evident that she was dead.		
42	59	F	Attempt to reduce dislocation at shoulder.	Sponge. 2 drs.	R.	Respiration became stertorous, and immediately afterwards the pulse, which had hitherto continued pretty firm, became imperceptible, respiration ceasing at same time. "Galvanism" applied; some convulsive efforts of respiratory muscles, but no further sign of life: about 6 minutes. Not commenced.	"Deep coma and cardiac syncope"	
43	45	F	Removal of cancer of breast.		P.	After inhaling with little effect for forty minutes the chloroform took effect, but the countenance changed and pulse ceased; after a few short laboured inspirations life became extinct. Fully under. More than 40 minutes.	Cardiac syncope.	
44	40	F	Removal of uterine polypus.	Lint.	P.	Pulse ceased to beat; face was extremely pale; a slow respiration still continued, but soon ceased. Fully under. Time not stated.	Cardiac syncope.	

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks
45	18	M	Operation for phimosis.	(Not covering nostrils) 2 drs.	P.	Pulse suddenly failed, became imperceptible; countenance assumed a pale, leaden hue. With stimulus of cold water, after three or four minutes, pulse again felt, and spontaneous respiration renewed. This improvement continued for ten minutes; then pulse and respiration ceased together. Artificial respiration produced no effect. complete insensibility. About 6 minutes.	Cardiac syncope.	
46	39	F	Removal of tumour of breast.	Rather more than 1 dr.		Breathing suddenly ceased; became deadly pale. No pulse could be felt; there were then two sighing efforts at respiration. Artificial respiration commenced within one minute, without effect. Commencing to inhale. One minute and a half.		
47		M	Reduction of dislocation of hip.	Apparatus (which mixed air with the chloroform).	P.	Pulse ceased, became pale; the respiration continued, but slow and irregular. Friction, ammonia, artificial respiration; the arms were raised and some pulsations were again felt. Appeared to answer questions, but then fell back again into a state of syncope. Reduction effected. Complete anæsthesia. A few minutes.	Syncope.	
48	13	M	Cleft palate.	A compress, held two centimetres in front of mouth.	P.	Pulse ceased; strange expression of face. With artificial respiration and cautery there were two or three efforts at respiration. Fully under during the operation.	Syncope.	
49	65	M	Amputation in thigh. 13–14 m n.	Snow's Inhaler. 3 drs.	P. & R.	Pulse, which was full and steady, gave a few rapid, irregular beats, then ceased; respiration ceased simultaneously; face became pallid and deathlike. Artificial respiration was followed by slight effort at inspiration. Stage of excitement 14 minutes.	Syncope.	
50	39	M	Introduction of catheter.	Lint.	R.	Began to snore; then a long interval; breathing became feeble and was ceasing; artificial respiration then used, and after a few minutes it then recovered, but again ceased. The pulse had continued to beat some little time after these symptoms, and after cessation of respiration. Fully under.	"Deep coma, apnœa, syncope."	
51	56	F	Amputation of leg. 3 minutes.	Lint, in oil silk. 2 drs.	P.	Pulse suddenly ceased in femoral; then several respirations, which ceased, but were renewed slightly with artificial respiration. Fully under. About 3 minutes.	Syncope.	
52	40	M	Excision of eyeball. 5 minutes.	Snow's Inhaler.	P. & R.	Respiration became feeble and sighing. With artificial respiration there was occasional breathing, but this presently ceased. Pulse, when felt for after spasm subsided, was absent. Operation not commenced. Death during stage of excitement.	Syncope.	
53	29	F	For relief of facial neuralgia. A few seconds.	An Inhaler. ½ dr.		Having inhaled 20 minims, she begged for more; began to inhale eagerly; gave a sudden start, as if taken in some kind of fit. No further sign of life. Not fully under.	Syncope.	Was sitting up, had inhaled 2 or 3 times before.
54	36	F	Tooth extracted? A few seconds.	Handkerchief. About 1½ dr.	P. & R.	Spoke and said, "I am not over yet," and immediately while yet speaking, she gave a convulsive start, and, with a stertorous inspiration and with the eyes and mouth open, sank to the floor. Artificial respiration was employed, and after a short time there were a few spontaneous inspirations, and it is said the pulse could be perceived at the wrist. Quite conscious. Death in about a minute. Operation not commenced.	Syncope.	Sitting posture. Had inhaled chloroform 4 times previously.
55	30	M	Removal of necrosed bone from finger. 3–4 minutes.	Sponge in lint.		Raised hands and trembled, kept spitting at the lint; appeared about to vomit. Suddenly he was violently convulsed, as if in an epileptic fit. The chloroform was at once discontinued and he was laid in a semi-horizontal posture. The convulsion lasted only a few seconds; he began to breathe with effort, and to gasp irregularly. His pulse was almost imperceptible and intermittent. With artificial respiration he rallied, and breathed without assistance. In a few seconds he relapsed, and could not be recovered. Not fully under. Operation not commenced.	Deep coma and cardiac syncope.	Sitting posture.

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
56	9	M	Excision of scapula. A few minutes.	First an inhaler, then lint.	P.	After making one long, deep inspiration (from lint) appeared to pass into a deep sleep. A few seconds later, pulse began to beat very quickly, then ceased for two or three seconds, then beat rapidly several times and ceased. He continued to breathe for at least a minute longer. Respiration was ceasing, but continued, with cold water, &c., for two or three minutes. Brandy poured into the mouth passed into œsophagus, but no effort to swallow. Artificial respiration produced some efforts at inspiration; but he did not rally. Under influence. Operation not commenced. Death in a few minutes.	Syncope	
57	35	M	Amputation of thigh. A few minutes.	Lint, not a large quantity.	P.	On raising eyelid it remained retracted; eyes slightly turned up. No pulsation in temporal or wrist. The respirations had almost ceased. With cold water, &c., respiration became better; in about 2 minutes a pulse was felt at the wrist. This continued, with good respirations, 2 or 3 minutes. The pulse then failed, and then the respirations. Artificial respiration produced no effect. Fully under. Death in a few minutes, 10 minutes from the time on table till death, but had inhaled in the ward 3 or 4 minutes before). Operation not commenced.	Syncope.	
58	17	F	Application of nitric acid to sores.	Snow's inhaler. 1 dr.		The operation being completed, moved as though recovering, and was left. A few minutes later, being noticed to be pale, was found pulseless and dead. Artificial respiration produced no effect. Fully under. Operation completed. Death in few minutes.	? Syncope.	
59	49	M	Excision of elbow joint. Two minutes.	Hollow sponge. About 1 dr.	P.	Gasping respiration followed by "slow convulsive movement of limbs." The pupils became dilated, and the pulse stopped. Not under influence. Operation not commenced. Death in about 2 minutes.		
60		M	Extraction of teeth.			"Died suddenly."	? Syncope.	Sitting posture.
61	23	M	Plastic operation on forehead.	6 drs.		Great excitement, with tossing about of limbs, followed by sudden collapse. Not fully under influence. Operation not commenced.	? Syncope.	Intemperate.
62	32	M	Removal of finger.	About 2 drs. used, given in 30 minim doses.	R.	The chloroform caused a little cough at first, which soon ceased, and the stage of excitement set in. When nearly insensible, he did not breathe freely, and there was spasmodic action of the larynx, as if from repeated swallowing of saliva. Chloroform was discontinued, and respiration had entirely ceased. No pulse could be felt. Artificial respiration and other means produced no effect. The heart's action continued for some time after the breathing and pulse had failed. Anæsthesia nearly complete. Operation not commenced.	? Asphyxia. P.M. Frothy mucus throughout air-passage. Lungs healthy. Heart-substance healthy and firm, a little fat on external surface of left ventricle; valves natural.	
63	11	M	To examine an injury of the foot, of some weeks' standing.	Cotton handkerchief.	P.	The boy was much frightened, and breathed irregularly at first. Fresh chloroform was added, and after 6 or 8 inspirations he became insensible. The handkerchief was given to the mother to hold and the examination of the foot commenced. Stertor set in, and the chloroform was discontinued. Pulse became imperceptible; lips livid. Artificial respiration produced a few short inspiratory efforts. No return of pulse. Extreme insensibility. Death in ten minutes from the commencement of inhalation.	? Overdose leading to paralysis of respiratory and cardiac centres.	

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
64		F	Extraction of tooth.	Handkerchief.		"Seized with alarming symptoms." Operation completed.		Sitting posture
65	8	M	Operation for strabismus.	Piece of lint. About 1½ dr. used at 3 applications.	P.	He flinched as the operation was commenced. More chloroform poured on lint. Face instantly became pale, and pulse ceased. Up till this had been quite regular, 80 per minute. Incomplete anæsthesia.	? Syncope.	
66	45	F		Handkerchief.		Death in ten minutes.		
67	43	M	For reduction of subcoracoidean dislocation.	Piece of linen rolled into cone. From 4–5 drs. used.	P.	Excitement followed the fresh application of chloroform, but soon passed off. Operation completed. Pulse and respiration regular; when pulse suddenly stopped; a few rapid, deep inspirations continued. Anæsthesia. Chloroform had been removed and remarks were being made by operator. Reduction effected.	? Syncope.	
68	7½	F	Forcible straightening of hip-joint.	Sponge. About 1 dr.	P.	Resisted when touched. On second attempt crying and struggling ceased; circulation had stopped; lungs continued to act for a few respirations. Incomplete anæsthesia. Operation not commenced.	? Syncope.	
69	15	F	Operation for strabismus.	Piece of folded linen.	P.	She gave a shriek and became insensible. The operation was commenced. Face became livid; pulse could not be felt; slight inspiratory efforts at intervals for a long time, and movement of nostrils, for at least half an hour, after cessation of pulse. Complete insensibility. Operation just commenced.	? Respiratory paralysis.	
70	45	M	To make incisions for extravasation of urine.	Inhaler. 1½ drs. used.	P.	The addition of half a dram of chloroform produced insensibility, and inhaler removed. Face became pallid. Pulse fluttered, and ceased. Respiration continued for one or two minutes. Anæsthesia. Operation completed.	? Syncope.	
71	28	M	Amputation of foot for an old injury.	Inhaler. 1 dr. used.	P.	When about half a dram had been taken pulse suddenly failed; face pallid. Inhaler removed. Gave a few gasps, passed urine, and died. Not under influence. Operation not commenced.	Syncope.	Had been fully under influence for an hour and a half for a previous operation. Intemperate.
72	24	M	To apply nitric acid to syphilitic sores.	Cone of lint covered with oiled silk. About 2½ drs. given at intervals.	P. & R.	Resisted the application of the acid. Struggling suddenly ceased; face pallid; pulse and breathing stopped. Artificial respiration produced a few inspiratory efforts. Imperfect anæsthesia. Application commenced. Dead in twenty minutes.		
73	57	M	For delirium tremens, following a fracture of tibia and fibula involving the knee-joint.	Piece of lint. About ½ dr.		After two or three inspirations the man "writhed" and fell back dead. Not under influence.	? Syncope.	Very intemperate.
74	50	F	To reduce dislocation of shoulder.	"A simple compress."	R.	Reduction effected. Chloroform removed. Face became congested. Respiration failed, then stopped. Death-like pallor. No pulse. Artificial respiration and galvanism caused inspiratory efforts, but no return of pulse. Complete insensibility. Operation completed.	Respiratory failure and syncope.	
75		F	To relieve neuralgic pains.	Upon a cloth.		The last dose given at nine o'clock; found dead at ten. Supposed to be asphyxiated. Had taken it twice to insensibility on the same day.	? Asphyxia.	In the habit of taking chloroform, in this way, very frequently, and in enormous doses. Very intemperate.
76	55	M	Perineal section for old stricture of urethra.	Inhaler. About 1 dr.	P.	Took chloroform quietly; breathing natural. Face turned pale, and pulse ceased. A few faint inspiratory efforts afterwards. None followed artificial respiration. Complete anæsthesia. Operation just commenced.		

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
77	29	F	Extraction of tooth. 4 minutes.	Handkerchief folded in a cone. About 1 dr.	P.	Forty drops sprinkled on the handkerchief produced excitement after 1½ minutes to 2 minutes' inhalation. Twenty more were added, and the excitement passed away. Pulse good; breathing calm; eye sensitive to touch. Suddenly the head fell to one side, face became pallid, pupils dilated, pulse ceased; she gasped a few times convulsively. Artificial respiration and galvanism produced a few inspiratory efforts, but no return of pulse. Partially under influence. Operation not commenced. Death in less than four minutes.	? Syncope.	Highly nervous and hysterical. Sitting posture.
78	42	M	Excision of the elbow-joint (following injury a month previously).	A piece of lint, 2 drs., the second dram applied four minutes after the first.	P.	At first breathing regular and pulse somewhat quickened; about one minute after the second dram was applied the man struggled and tried to raise himself; the pulse suddenly failed, breathing continued for some minutes, and the lips remained florid. The tongue was immediately drawn forwards, artificial respiration and galvanism commenced, and continued for three-quarters of an hour, but of no avail. Slightly under influence. Operation not commenced.	? Syncope. P.M. Heart and right lung healthy; the left so infiltrated with tubercle as to render it almost useless for respiration.	
79	30	M	Operation for removal of necrosed portion of tibia. 6–7 minutes.	Inhaler. About 2 drs.	P.	Took the chloroform well, breathing regular and even, as also was the pulse. Operation commenced in 5 minutes, and a minute later the pulse, which was continuously watched, ceased instantaneously; the breathing continued unchanged for several seconds, when the face became pale, and the respirations lower, and soon stopped. Ammonia to nostrils, cold affusions, artificial respirations by compression of chest and by Sylvester's method, galvanism to cardiac region, and two needles passed into the heart, produced no result. Complete anæsthesia. Operation commenced. Death in 6 to 7 minutes from commencing to inhale.	? Syncope. P.M. 23 hours after death. Brain dark, vessels congested, especially those of the cerebellum. Pericardium contained a quantity of turbid yellow serum. Heart; mark of one needle about an inch above the apex, the other an inch above this, both in left ventricle, which was partially contracted; right, not so; valves healthy; slight fatty deposit amongst fibres of right ventricle, none on left side; to the eye the muscular tissue of the heart was perfectly healthy. Lungs healthy; slight congestion below and behind on both sides; abdominal viscera normal, but rather congested. The blood was universally fluid.	Apparently a very healthy man.
80	28	M	Operation for fistula in ano. 8–10 minutes.	Inhaler. 1½ drs.	P.	He breathed quietly for 6 or 8 minutes, and then struggled violently. Had a sort of tetanic spasm, back curved so as to rest on his head and heels. The chloroform was suspended during this excitement. Pulse regular, good. The inhaler was about to be re-applied, when the pulse in the temporal artery intermitted twice, and ceased. The body became ashy pale, patient gave 3 inspirations, each shorter than preceding, and breathing stopped, pupils natural. Cold affusion, ammonia to nostrils. Artificial respiration by Sylvester's method, and galvanism, were of no service. No heart sounds could be heard. Partially under influence. Operation not commenced. Death in 8 to 10 minutes.	? Syncope. P.M. 48 hours after death. Heart apparently healthy, so far as muscular tissues are concerned; ruddy in colour; cavities dilated, and their walls thin. Lungs universally adherent; they contained some scattered tubercle and one small vomica. Liver large, pale, fatty. Kidneys natural.	Not good health. Intemperate. On Jan. 10, 1863, he had been operated on, under chloroform, for an exostosis of the femur, without any ill effects from its use.

DEATHS UNDER CHLOROFORM.

CASES FROM ROYAL MEDICAL CHIRURGICAL SOCIETY'S REPORT BETWEEN 1848 AND 1860 (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
81	22	M	Operation for phimosis.	Weiss' apparatus.	P.	Was a little nervous, pulse good. In about 4 minutes face became slightly congested, and pt. struggled to rise in bed. Face became dusky and lips blue. Cold affusion to face and compression of ribs caused a deep inspiration, but pulse could not be felt. Artificial respiration, and other measures, were tried; he breathed at intervals several times, but respirations became fainter, and at length ceased. Partially under influence. Prepuce removed.	? Syncope.	He expressed no dread of chloroform but always had a great horror of it, and possessed an idea it would kill him.
82	14 — 15	M	Extraction of tooth.			The patient was seated; he had syncope, and died.	Syncope.	Sitting posture.
83								
84	30	M	Reduction of dislocated hip. 20 minutes.	Apparently on handkerchief.		Very violent efforts necessary for reduction, which was at length accomplished, when symptoms of "cerebral congestion" set in. "Never fairly under influence." Operation completed. Death in 20 minutes after the chloroform was removed.		
85		M	To reduce a dislocated humerus.		P.	Took chloroform readily, just as reduction was effected pulse stopped, and, after a few gasps, breathing also. Artificial respiration and galvanism produced no effect. Under influence of chloroform operation completed.	? Syncope.	
86	23	M	Amputation of leg at the lower third for disease of the bones of the foot.	Piece of lint. "A considerable quantity."	P.	The man moved the limb slightly, and more chloroform was applied, when he suddenly became deathly pale, and his pulse ceased; "aspect like that of a corpse." The tongue drawn forward, and artificial respiration by compressing the chest kept up for half an hour. Efforts at inspiration occurred at intervals of from thirty seconds to a minute, for eight or ten minutes after the pulse had ceased—some of them of considerable force—so as to lead to a hope of a favourable issue; but no return of pulse or of colour to the face. Once or twice, with inspiration, a movement of the neck and right arm. Galvanism produced no effect beyond a quivering of the muscles. Anæsthesia produced without anything unusual occurring. The limb was removed and the arteries were being tied.	? Syncope. P.M. twenty hours after death. Blood perfectly fluid "like thin tar and water." Heart flabby, moderately full, no coagulum, valves healthy, muscular substance healthy, both to the eye and under the microscope. Lungs contained more air than usual, everywhere crepitant, did not collapse much on opening chest, no tubercle anywhere. Liver and kidneys normal.	Patient very wasted and debilitated from disease, supposed to be phthisical.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS.

1	27	M	Avulsion of great toe-nail. 2 or 3 minutes.	On towel.	P.	The first two doses (? amount dropped on towel) produced no effect, the third produced insensibility. The operation took but a minute or two and was completed, but patient never returned to consciousness. Colour of face changed and pulse failed. Artificial respiration for ½ an hour was useless.	Syncope. "The chloroform given in a dangerous way (open towel) instead of an inhaler."	Was suffering from cardiac disease as shown by P.M. Had taken chloroform repeatedly on previous occasions.
2	?	M	Avulsion of toe-nail.		?	?	?	?
3	?	M						
4		F	To quiet fit of mania.	On lint.	?	?	? Syncope. Congestion of lungs.	Lunatic subject to violent fits of mania. In the last stage of exhaustion. Had often taken $CHCl_3$ before.
5	40	M	For circumcision.	Napkin 1½ ozs.	R.	Stertorous breathing followed by failure of R. Measures resorted to were artificial R., galvanic battery to chest and neck; inflation of lungs by tube and bellows; rubbing limbs.	? Syncope. P.M. Heart fatty; lungs congested with apoplectic clots; œdematous and less crepitant than usual.	

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
6	42	M	For removal of lipoma on back. 3 or 4 minutes.	On single fold of thin lint. 5½ drs.	P. & R.	Patient became excited, struggled and talked. This ceased and face became congested and breathing stertorous. On patient being turned over on left side breathing ceased suddenly. Artificial R. by Marshall Hall's method and electro-magnetism employed for 1 hour, but failed. No. P. or heart beat observed after R. first ceased.	Failure of R. and heart action together. P.M. Lungs engorged with venous blood; heart large, flabby, myocardium soft, ventricles thinner than usual, right side distended, left empty, blood fluid.	Patient a tall, stout, muscular man; inveterate drinker. Anæsthetic given at his own request, though dissuaded by surgeon. Chloroform quite pure.
7						When untoward symptoms came on artificial R. resorted to, contraction of heart kept up for 1½ hours, and a few natural respirations obtained.		
8	24	M	For ingrowing nail.		P.	After cessation of pulsations of heart, patient made at intervals spontaneous inspirations and expirations.	? Syncope.	
9	40	M	For amputation of leg. Administration just begun.	Diluted.	P. & R.	Had scarcely made 4 inspirations when R. and circulation were suddenly arrested, and so remained in spite of all means employed. [Surgeons objecting to chloroform being given, and man wishing for it, a small quantity at some distance from mouth was given.]	? Syncope.	Strong man. Leg crushed by fall from horse. Syncope at time of accident. Very nervous.
10		M	For operation for glaucoma. ½ hour.		R.	Sickness; the "anterior chamber of eye just opened, filling with blood;" sudden fit, gasping, &c. A *crowd* assembled round patient; Marshall Hall's method of artificial R. tried; rubbed with *ice* for ½ hour, P. keeping good. At length P. ceased.	?	Patient a strong and muscular man; the operation very trivial.
11	7	M	For tracheotomy for laryngitis.			Patient seemed relieved by inhaling the $CHCl_3$; but no sooner was the tube within the trachea than he gasped and died. Artificial respiration was resorted to for 25 minutes; cold water affusions and external stimulants. All with no effect.	? Asphyxia. P.M. Tissues of larynx infiltrated; general engorgement with marks of ulceration; lymph puriform; epiglottis thickened and erect.	Symptoms of laryngitis very urgent; pulse 120; vital powers oppressed.
12	31	M	To induce sleep in delirium tremens.	Handkerchief.	R.	R. impeded. Chloroform suspended. Artificial R. Patient gave one deep breath and two slight ones. Other means resorted to were pulling out tongue, cold affusions, rolling body on side, continued for 20 minutes with no avail.	? No P.M. allowed.	Intemperate for long time.
13		M	Extraction of tooth.	On handkerchief.	?	After extraction of tooth convulsive agitation set in, which became violent, and patient expired. Restorative means used but not stated.		Sitting posture.
14			Extraction of tooth.					Sitting posture.
15					R.	Sudden embarrassment of R. and sudden dilatation of pupils.	Suffocation. P.M. Lungs studded with tubercles and gorged with blood.	
16	32	M	Amputation of left leg for scrofulous disease.	Fold of bandage.	P.	Patient seemed to come rapidly under influence when suddenly, sphincters relaxed, lips quivered and patient died. Breathing continued after heart ceased beating. Galvanism and artificial R. used to restore life.	"Fear, Debility, and Chloroform" (Verdict of jury). P.M. Right cavities of heart filled with fluid blood.	Debilitated.
17	35	M	Passing catheter.	3ij. (on lint).	R.	Operation about to be begun when patient ceased to breathe and animation seemed suspended. Galvanism and artificial inflation in turn employed but failed. Pupils dilated, lips livid.	Failure of R. P.M. Pyelonephritis, left kidney. Right kidney healthy, slightly enlarged, walls of bladder thickened, urethra obstructed.	
18								

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
19	50	M	For removal of internal piles.	Hollow sponge. ʒij. nearly.	P.	While struggling continued some stertor appeared; in another minute full stertor; face dusky and livid, without pallor; P. ceased and R. became slower, operation not begun. Measures adopted were: Artificial R. slapping face and chest with wet towel; blood-letting from jugular vein; rubbing limbs; electro-magnetism.	Syncope. P.M. Heart loaded with fat, muscular substances thin and weak, walls of right auricle and ventricle in state of fatty degeneration, same cavities gorged with fluid blood.	Patient large, stout, very muscular; abdomen prominent. Seemed given to drink. Arcus senilis; P. and R. natural.
20	8	M	For plastic operation for deformity caused by burn on chin.			Just before conclusion of operation patient fainted. Measures employed were artificial R.; then warm bath and galvanism. Was recovering from $CHCl_3$ when bad symptoms came on.	Paralysis of heart. P.M. appearances *nil*.	
21		M	For reduction of fractured ankle.					
22	36	M	For putting stiffened leg in splint in case of diseased hip-joint.	ʒiss. Snow's inhaler.	P.	After inhaling for 1 minute had violent shaking fit; inhaler was removed, and he became calm. $CHCl_3$ again given; when at rigid stage and was trying to raise himself, muscles relaxed rapidly; he fell back, became pale; breathing laboured, and P., hitherto good, stopped. Measures adopted were artificial R. (for 1½ hours), galvanism, acupuncture.	? Syncope. P.M. Heart large, cavities full of fluid blood; loaded with deposit of fat. Liver, kidneys and brain much congested.	
23		M	For removal of two cysts—one on lid, other on tongue.	ʒij. On lint.	P.	On inhaling patient became excited; when convulsions ceased fell into collapse; had 3 violent fits of sneezing and heart ceased beat; breathed several times at long intervals.	Syncope.	Patient a feeble subject.
24	35	M	For removal of left testis for malignant disease. 4 minutes.		P.	Soporose breathing commenced, pulse became feeble; chloroform withdrawn, but P. rapidly failed, and in 20 seconds ceased beating. Patient made 8 or 10 regular and 2 or 3 irregular respirations and inspirations after heart ceased. Cold water, fresh air, Marshall Hall's method of artificial R.; ammonia to nostrils, friction to extremities, and galvanic current from spine through thorax to diaphragm. All these for 1 hour.	? Syncope. P.M. No trace of organic disease; blood fluid and organs generally congested. When heart ceased beating ventricles dilated, valves quite healthy; no fatty degeneration.	Patient a fine muscular man.
25	33	M	For fistula in ano. 10 minutes.	On lint folded on handkerchief. ½ oz. Not given in measured quantity.	R.	Patient struggled violently, raised himself on seat, and stopped breathing. Window was opened. Marshall Hall's method of artificial R. and other methods tried.	Paralysis of R. P. M. Heart and lungs found to be extensively diseased. This verdict was disputed as P.M. took place 16 days after death.	Patient in excellent state of health, quite fasting before administration, heart and lungs in excellent state.
26		F	For examination of shoulder joint.	Quantity small.				Chloroform used of unexceptionable quality.
27	16	M	Amputation of great toe for disease of bone. 5 minutes.	No apparatus to determine quantity.	?			Patient said to be very healthy.
28	40	F	For removal of tumour on lower jaw.	2 dr. (Is not quantity under-stated?)	P.	Before operation was finished patient became slightly conscious. After second dose she took one inspiration and pulse stopped suddenly. She gave three or four gasps, and in half a minute was dead. Every effort made to restore animation without effect.	P.M. Fatty degeneration of heart.	
29	17	F	For operation on sphacelated wound consequent on a fall.	2 dr. Napkin.	P.	Operation begun, after second dose took one inspiration and P. ceased suddenly. Every effort made to restore animation with no avail.	? Syncope. P. M. Heart feeble and fatty.	Patient of nervous temperament and suffering from fatty degeneration of heart. Chloroform given very cautiously
30	23	M	For amputation for diseased knee.	Snow's inhaler.	R.	R. failed. P. kept good. Larynx opened; stimulant given; Marshall Hall's method of artificial R. kept up.	Failure of R. P.M. appearances *nil*.	
1	27	M	Fracture of leg.					

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
32	29	F	For removal of small tumour of gum (? epulis).			Died in an instant.	? Syncope.	
33	60	F	For reduction of strangulated umbilical hernia. 11 minutes.	ʒi, 160 minims.	P. & R.	Operation commenced and twice interrupted (1) by coughing, and (2) by vomiting. At 4 minutes after the inhalation the operation, about ½ completed, was stopped, and patient became so feeble that restorative measures were used. In 4 minutes more, died.	Rupture of stomach, together with previous great exhaustion. P. and R. failed till both ceased. Stomach completely strangulated and ruptured in the peritoneal coat and back of the cardiac pouch.	Patient corpulent, greatly exhausted, had vomited for 6 days, and had been constipated 3 days. Was operated on for strangulation 10 years before.
34		M	For amputation of finger.		P.	Died instantly. P. ceasing and face becoming discoloured. Artificial R. and galvanism tried without success.	Syncope. P.M. Lungs unhealthy, heart fatty.	
35		M	For fistula in ano.		R.	Convulsed. Allowed little fresh air, $CHCl_3$ again given; still convulsed, suddenly ceased breathing, usual remedies for resuscitation.	Apnœa (probably) but would seem from symptoms to have been syncope.	
36		F		1 dr. Handkerchief.	R.	Head was observed to fall on one side, and the breathing ceased suddenly.	Syncope.	A nervous hysterical woman.
37	•							
38								
39	38	F	Vesico-vaginal fistula.	Inhaler. ʒiiss–ij.	P.	Suddenly seized with spasm of respiratory and other muscles. P. failing though heart beating. Artificial R., galvanism and cold affusions used in vain.	Syncope. P.M. Heart flabby and fatty.	Weak, irritable and nervous, had had 9 children and 1 miscarriage at end of 3rd month. From end of last confinement had suffered from incontinence of urine.
40		F A	For removal of tumour at back of neck.			Operation skilfully performed, but insensibility protracted. At end of ½ hour limbs moved spasmodically, ending in convulsion and death.	? Syncope.	
41	41	M	For excision of joint (right arm).		P.	Pulse became feeble, galvanism and other remedies applied for ½ hour with negative result.	P.M. Heart fatty and weak in structure.	
42		M						
43		F	For fistula. 7 minutes.	2 dr.	R. & P.	Patient struggled slightly. After operation consciousness did not return, and R. became slower, and ceased in 3 minutes. Measures adopted were: cold water in face sal volatile, galvanic apparatus and Marshall Hall's method to procure artificial R.	Cessation of R. apparently, but medical opinion inclined to rank it under heart failure. P.M. Heart fatty, flabby, and deformed, walls of left ventricle very thick, of right very thin; liver enlarged, pressing upwards against lungs. Lungs very small, gorged with blood, and with black patches, showing death from chloroform.	Patient large and well made, seemed to have no heart disease, but suffered occasionally from indigestion.
44	16	F	For operation on hare lip. 5 minutes (about).	(1) By inhaler, with no effect. (2) on lint. *Patient seated in chair.*	P.	Before complete insensibility, pupils dilated rapidly, patient fell back, became pale and lips bluish. Artificial R. tried for ½ hour with no effect.	Syncope. The pulse was *not* felt continuously but occasionally. The coroner's opinion at inquest was that continuous watching of P. might have saved life of patient. The operator, Mr. Gay, considered immediate cause of death to be palsy of involuntary muscles (see letter, *Ibid.* p. 578.)	Heart considered sound. Sitting posture.

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
45		M	For passage of catheter.	4 drs.		"The reporter thought the man had fainted; it was not the usual congestion." Died in an instant, 20 ozs. of blood were taken from arm as chloroform restorative.	Syncope.	Perfectly healthy.
46	30	F	Extraction of teeth.			After 6 or 8 teeth had been extracted patient ceased struggling—whole system became relaxed and appearance death-like. Efforts for resuscitation made for 3 hours which proved unavailing.	Syncope. Inquest and P.M. held but result not known.	Sitting up.
47	21	M	For removal of tumour affecting nasal region. 9 minutes.	Towel.	R.	Profuse hæmorrhage; R. became very low. Artificial R. resorted to (Sylvester's method) succeeding for a while, but in 25 minutes respiration ceased entirely.	"Apnœa from effects of $CHCl_3$ and loss of blood." P.M. Heart and lungs healthy; lungs gorged with blood in patches, fluid blood on both sides of heart. Liver and kidneys gave signs of death from suffocation.	
48	29	F	For removal of tumour of urethra.				"Died from the effects of the vapour."	A question arose as to the quantity administered to patient on a similar occasion two years before, and the absence of books of reference in such cases in the hospital. The jury expressed an opinion that proper case books for reference should be kept in the hospital.
49	56	M	Avulsion of great toe-nail.				Fatty degeneration of heart.	
50		F	For extraction of tooth.	Napkin.	P. & R.	Only slightly under; after operation face became livid, jaws clenched; breathing arrested; patient died.	Syncope.	Sitting posture. When examined beforehand, no trace of heart disease.
51	18	M	Amputation of leg.	Napkin.	P.	Patient never fully anæsthetised, during operation screamed out; then signs of failing circulation came on, and death ensued in 10 minutes. Methods resorted to were cold affusions, ammonia, drawing forward tongue, artificial R. and galvanism.	Shock. Doubtful whether $CHCl_3$ exerted any influence. P.M. Heart healthy. Lungs congested. Brain very large and well developed (60·89oz. avd.)	Nothing in state of heart appeared to forbid use of chloroform.
52	24	M	Removal of bone from right foot. 2 to 3 minutes.	Snow's inhaler. 40 minims.	P.	P. suddenly became imperceptible. Pupils not dilated and breathing natural. Inhaler removed. R. became deep and sobbing, and tongue protruded between teeth. No return of P., but R. continued 1 minute after P. ceased. Restorative measures were:—Cold douche, brandy injection per rectum, solution of ammonia on lint to nostrils, galvanism (forceps not needed as tongue did not fall back), artificial R. for half-hour.	Syncope. P.M. Both lungs healthy, right more congested than left. Ventricles contracted and empty, auricles with blood valves and muscular tissue healthy. By microscopical examination, ultimate fibres free from oil globules and striæ well marked. Walls of left ventricle slightly hypertrophied without dilatation. Aorta healthy.	Patient healthy looking. By examination nothing to contraindicate use of $CHCl_3$.
53	38	M	For cauterisation of sloughing sore on penis.	Inhaler. 2 drs. in separate doses of 1 dr. each.	P.	After inhalation of first dose, holding his breath and trying to avoid the vapour (which was diluted however) so that much was wasted. After he had spat second dose given, but he struggled so much that P. could not be watched continuously. Suddenly pupils became widely dilated and P. ceased. On removal of inhaler he drew deep gasping breaths for ½ minute. Restorative measures: cold splashings, Marshall Hall's method of artificial R., and after by Sylvester's method, brandy injection, galvanism, friction.	Syncope. P.M. Heart of normal size, ventricles partially dilated, and both with fluid blood. No valvular disease. No fatty degeneration.	Patient healthy-looking. Chloroform given by his own desire.

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
54		M	For amputation of leg for gunshot wound. 15 minutes.	Sponge. ½ oz.		Died 5 minutes after untoward symptoms set in.	P.M. Lungs and heart quite healthy.	Had taken $CHCl_3$ in larger quantity before.
55	13	M					Syncope.	
56	2		For removal of finger. 5 minutes.	On lint. 30 drops.				
57			For reduction of luxation of head of humerus.		P.	After the reduction was completed it was perceived that the P. at the wrist was gone. All the usual means resorted to in vain.	Syncope. No P.M. permitted.	
58		M	Cataract.			Operation had just been completed when patient was observed to change colour, and in spite of the use of galvanism and other nervous stimuli he expired.	Syncope. P.M. The heart was found in a very soft and fatty condition. No morbid sound had been heard previously by auscultation.	Had twice before been under $CHCl_3$ without bad effect.
59		F	For extraction of tooth.	Upon napkin. 30 minims in two doses.	P.	After extraction of tooth there was peculiarity in R. which almost at once ceased and on feeling at wrist there was no P. Artificial R. without effect.	Probably syncope characterised by spasm of left side of heart. P.M. Nothing abnormal. Left ventricle of heart firmly contracted, and cavities on left side empty; on right side auricle and ventricle moderately distended, and there was no clot.	Sitting up. The patient had taken a larger dose of chloroform on a previous occasion with no ill effect.
60		M	For avulsion of nail.	Handkerchief.	?			Patient an apparently healthy man.
61	1½	M	To facilitate catheterising. 2 or 3 minutes.		P. & R.	Lips became blue, jugulars distended, P. and R. ceased. Fingers passed down epiglottis, deep inspiration, vein of neck opened and 1 oz. blood let, then another inspiration. Tracheotomy, artificial R., stimulation of diaphragm by induction apparatus, cold affusions, electricity to region of heart and acupuncture of heart. These measures revived action of heart for short while but it soon ceased.	Syncope. No P.M. account furnished.	Was suffering from œdema and albuminuria following scarlatina.
62	11	M	Lithotomy.		P. & R.	P. and R. ceased at same moment.		
64		M	For reduction of dislocated thumb. 3 or 4 minutes.	1 dr.	P.	P. suddenly ceased beating, and in a moment patient was dead.		Patient strong and healthy. Was said to have been compelled to take $CHCl_3$ against his will.
65	18	M	For removal of necrosed bone from stump of amputated thigh.	2 to 3 dr.	?		P.M. Right side of heart loaded with dark-coloured blood, and lungs highly congested.	
66	20	F	For extraction of teeth.	Sponge. 1 dr. (in three portions).		After inhaling first two portions, three teeth extracted. Consciousness not lost. Remainder then given. Remaining teeth extracted. Sudden pallor; R. ceased, then P. Congestion of capillaries about neck and upper portion of chest; pupils dilated. Measures adopted were: External stimulation, artificial R. and galvanism for ½ hour with no effect.	Syncope.	Sitting posture. Had taken $CHCl_3$ for extraction of 6 teeth 3 days previously.
67		M			P.		Syncope.	
68	9	F	For strabismus.	1½ drs.	R.	Insensible and pulseless; breathed heavily at intervals. Pupils dilated and R. ceased. Artificial R. resorted to, but death took place in two hours.	Cessation of R.	
69	8	M	For strabismus.			Died before commencement of operation.		
70		M	For operation about thigh.		?		Inhalation of chloroform.	

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
71	35	M	For removal of ligature after removal of diseased testicle. 5 to 7 minutes.	Towel cone. 1 dr.	P.& R.	After having passed into second stage, suddenly became stertorous, underwent spasm (opisthotonic) for about 1 minute, and ceased to breathe. Efforts to restore action of heart and lungs failed. Means employed were: Cold affusion, drawing out tongue, artificial R., ammonia to nostrils and heart, galvanism.	Syncope. Paralysis of heart. P.M. Kidney congested measured 7 inches in length by 4 in width, resembling larger red kidney described by Bright. Slight accumulation of fat over pericardium and on surface of heart. Brain effusion between dura and pia mater, and between latter and arachnoid. Cessation of heart's action may have been caused (1) by convulsion causing effusion on brain—convulsion due to blood charged with excrementitious matter; (2) overloaded blood charged with $CHCl_3$ acting on heart.	Had twice before taken $CHCl_3$ for removal of testicles, large doses, 2 oz. and 1½ oz. On second occasion was suffering from "Dengue."
72	40	F	Examination of injury to elbow.	? dr.	? R.	Before examination could be made, patient ceased breathing and died.	P.M. Heart, liver, and kidneys somewhat fatty, Lungs "hypostatic." ? Hypostatic congestion.	Patient was stout. Chloroform was carefully administered.
73	30	M	For operation for strangulated inguinal hernia. 25 minutes (about).	Silk handkerchief. 1½ drs.	R.	Vomited; fluid sucked into windpipe (apparently), struggled, and turned black in face. Position of patient changed, ammonia and other restoratives given, but death took place in very short time ("less than 2 minutes," according to one account).	Asphyxia.	
74	15	M	For operation on knee joint.		P.	After completion of operation, P. suddenly ceased to beat. Artificial R. for an hour and other means employed without effect.	Syncope.	
75	59	M	Lithotomy.	Napkin folded conically. More than 1 dr.		Operation just begun, for which little more $CHCl_3$ given. Patient made one or two R.s when condition became critical. Measures adopted were: Cold affusions, spanking, striking chest, pressing abdomen, laryngotomy for artificial R. All with no avail.		
76	45	M	For circumcision for ulcer on prepuce.	Towel.	P.& R.	Lividity; cessation of P. and R. Measures adopted were: Drawing forward tongue, artificial R. (Marshall Hall's method) for 1¾ hours, ammonia to nostrils, galvanism through thorax and other parts.	? Syncope. P.M. Heart: 13½ oz., walls bloodless, tissue easily torn, fatty degeneration; lungs intensely congested; liver fatty; kidneys congested; brain: effusion of of blood on dura mater, little serum in lateral ventricle.	On last admission presented usual appearance of having been on debauch.
77	19	F	For removal of warts about vulva. ½ minute.	In compress (quantity small).	R.	Exhibited symptoms of asphyxia. Restorative efforts used unremittingly without success.	Asphyxia.	Patient had taken $CHCl_3$ successfully three weeks before for same operation.
78	17	M	Removal of cystic tumour of neck.		P.	Patient seized with violent excitement, while large vein at bottom of cyst poured forth much blood. Deligation of vein difficult because of convulsions, but vessel having been secured and wound being dressed, and chloroform removed some minutes, P. at wrist stopped and patient died after artificial R. for 1½ hour.	Syncope. M. Broca thought that air in veins caused death, but this not confirmed by P.M.	Patient found to have been subject to epilepsy.

DEATHS UNDER CHLOROFORM.

CASES BETWEEN 1860 AND 1891 FROM PUBLISHED RECORDS (*continued*).

1 Reference.	2 Age.	3 Sex.	4 Operation and duration of administration.	5 Method of administration.	6 P. or R.	7 Symptoms occurring under anæsthetic.	8 Assigned cause of death.	9 Remarks.
79			For ligature of external iliac artery for traumatic femoral aneurism.	Napkin.	P.	P. at wrist suddenly imperceptible, R. feeble, face purplish. Measures adopted were drawing forward tongue, cold affusions, ammonia to nostrils, electricity and artificial R. with no avail. Heart's action seemed to have stopped before R. entirely ceased.	? Syncope. P.M. Blood in veins and in heart quite fluid, almost black. Many bleeding points in section of brain and medulla oblongata. Pia mater congested. Other appearances healthy.	
80	68	M	Cancer of colon.				P.M. "Cancer of colon, chloroform, ileus, &c."	
81			Extraction of teeth.			After operation patient rallied for a while and then expired.	Syncope.	Sitting posture.
82	28	M	Amputation of finger.	Handkerchief. 1 dr. In 3 doses of 20 minims.	P.	Became violently convulsed and P. ceased.	Syncope. Convulsions. Fatty degeneration of heart. P.M. Tubercle at base of brain. Heart soft and fatty. Liver heavy and soft.	
83	12	F	Operation for necrosis of lower end of tibia.	Folded towel. 1 oz.	P.	Deadly pallor; twitching of muscles about mouth; eyes rolling up; pupils dilated; breathing stertorous; P. at wrist imperceptible. Measures adopted were—drawing forward tongue, applying ammonia to nostrils, pouring whiskey down throat, cold affusions. As heart's action could not be heard artificial R. (Marshall Hall's method) employed, with no effect.	Syncope. P.M. Heart healthy in texture, blood both sides, with few clots on each; right ventricle soft and flaccid, left, rigidly contracted. Lungs congested, right with black blood. At inquest most searching enquiry made.	Had taken $CHCl_3$ ($1\frac{1}{2}$ oz. used) four days earlier for exploration of sinuses. No untoward effects.
84	53	M						
85	26	M	Tying vessels in cut hand.		P.	P. nearly imperceptible; lips pale; face livid; R. distinct though irregular. Tracheotomy performed. Artificial R. set up; result 2 or 3 hurried Rs., but no return of breathing or circulation. Artificial R. kept up $\frac{1}{2}$ hour.	"Chloroform." P.M. ? Syncope. "Very violent spastic contraction of heart in subject weakened by loss of blood."	Hand had been cut with piece of broken porcelain, had been much hæmorrhage and patient very anæmic.
86		F	Teeth extraction.				No inquest, coroner being satisfied that $CHCl_3$ had been administered properly.	"Sitting up."
87			Secondary operation on eye.				No inquest, coroner being satisfied that $CHCl_3$ had been administered properly.	
88			Operation on eye.					
89–90								
92								
93								
94								
95	38	F	Extraction of teeth.	Sponge. 2 dr. (hardly used).		After 3 or 4 inspirations R. ceased; no P. Artificial R. and stimulating applications to heart and extremities to no effect; 1 or 2 inspirations after bad symptoms appeared.	No P.M. allowed.	
96			For fistula.		?			
97			Removal of left eye-ball.		? P.		? Syncope. P.M. showed heart very diseased.	No symptoms of heart disease ascertained before administration of Chloroform.
98			Surgical operation.				Diseased state of heart.	$CHCl_3$ given with due precautions.